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WEATHER BUREAU

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 1, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			30.05	763.3	89.6	32.0	43	N			1		2			0	0	Clear	Michel.
Algiers			30.04	762.9	84.6	29.2	70	N			2		0			0	0	Clear	Peter.
La Calle			30.03	762.8	90.0	32.7	72	NNW			2		2			0	0	Clear	Fleury.
Tunis			30.07	763.7	91.4	33.0		E			3		1			0	0	Clear	Jacques.
Sfax			30.14	765.5	87.8	31.0		SE			3		2			0	0	Clear	Husson.
Saida			30.05	763.2	91.4	33.0		N			3		2			0	0	Clear	Millot.
Tebessa			30.13	765.3	86.9	30.5		E			3		2			0	0	Fair	Bourgeois.
Geriville			30.07	763.7	91.2	32.9		ESE			3		6			0.039	1.0	Fair	Lemaillot
Laghouat			30.10	764.5	95.0	35.0	44	W			2		4			0	0	Fair	François.
Biskra			30.10	764.6	104.7	40.4	31	Calm			0		4			0	0	Fair	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Agram	29.47	748.5	30.00	762.0	71.6	22.0	66	NE			3		10			0.004	0.1		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.24	742.6	29.98	761.6	68.4	20.2	71	W			1		10			0.075	1.9		Dr. Wierzbiski.
Eperies	29.08	738.5	29.93	760.1	70.2	21.2	66	N			2		10k;s		S	0.199	5.05		Julius Mikolik.
Gratz	28.80	731.5	30.02	762.4	66.2	19.0	87	S			2		10			0	0		Andreas Rospini.
Hermannstadt	28.46	722.9	29.78	756.5	86.0	30.0	33	NW			3		3			0	0		Prof. Reissenberger.
Kremsmünster	28.69	728.8	30.00	762.0	65.5	18.6	70	W			2		10			0.031	0.8		Prof. C. Wagner.
Lemberg	28.91	734.3	29.87	758.6	66.4	19.1	82	NW			2		5			0.244	6.2		Dr. T. Stanecki.
Pola	29.82	757.4	29.93	760.1	83.5	28.6	66	SSW			1		10cks			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.68	753.8	29.95	760.6	77.0	25.0	53	N			3		3			0	0		Karl Stancel.
Trieste	29.85	758.2	29.95	760.8	72.0	22.2	81	ENE			2		10			Blank	Blank		P. Busin.
Vienna	29.33	745.0	30.01	762.2	69.1	20.6	70	W			1		10			0.102	2.6		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Arlon	28.64	727.5	30.14	765.6	58.3	14.6	61	W			1		9			0	0		Royal Observatory.
Brussels	29.91	759.6	30.11	764.7	61.3	16.3	47	W			4		4		W	0	0		
Furnes	30.08	763.9	30.10	764.5	58.8	14.9	92	WNW			4		7			0	0		
Maeseyck	29.97	761.1	30.10	764.4	61.9	16.6	90	W			6		2			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Reduced to sea-level.		Temperature of Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.		
Aberdeen	29.78	756.4	29.88	758.9	49.4	9.7		W	15	6.7			6			0.015	0.38	Showery	C. H. Thompson; W. Boswell.
Ardrossan	29.94	760.5	29.95	760.7	54	12.2		W			3		7					D. clouds	William McNeil.
Armagh, Observatory			30.03	762.7	55.0	12.8		WSW	9	4.0			6					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.06	763.5	55.3	12.9		W	26	11.6			7					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.06	763.5	56.9	13.8		WSW			2		7					Showery	J. Dreyer.
Bradford, Yorkshire	29.70	754.4	30.09	764.3	57.0	13.9		W			1		2			0.07	1.8	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.08	764.0	65.0	18.3		W			1		5					D. clouds	H. Todd.
Cardington			30.10	764.5	60.0	15.6		NW			3		3					Blue sky	John McLaren.
Chatham, School M. E	29.94	760.5	30.07	763.8	60.2	15.7		W			1		6					Blue sky	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.68	728.5	30.15	765.8	54.0	12.2		NW			2		4					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.98	761.5	30.01	762.2	50	10.0		WSW			3		10					Overcast	J. Mac Gowan.
Dover	30.08	764.0	30.11	764.8	62	16.7		WSW			3		1					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.05	763.3	58.6	14.8		NE	0.6	0.3			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.94	760.5	30.17	766.3	60.1	15.6		WNW			1		8					Overcast	The Staff.
Fort Napier, (Natal)	27.87	707.9	30.08	764.0	73.0	22.8		E			4		4					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.00	762.0	77.0	25.0		Calm			0		5					Raining	
Galway, Queen's College			30.00	762.0	54	12.2		WSW			2		7					Showery	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.99	761.7	30.02	762.5	83.0	28.3		W			3		6					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.74	755.4	29.94	760.5	50.3	10.2		W			4		10					Raining	D. G. Maclean.
Great Yarmouth	30.05	763.3	30.06	763.5	58	14.4		WNW			4		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.93	760.2	30.10	764.5	62.4	16.9		NW			1		5					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.93	760.2	30.15	765.8	61	16.1		WNW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.13	765.3	61	16.1		N			4		3ck			0	0	Fine	M. P. Moyle.
Holyhead	30.02	762.5	30.07	763.8	57	13.9		SSW			3		2					Blue sky	John Tilston.
Jersey	29.89	759.2	30.19	766.8	62.0	16.7		NW			3		2					D. clouds	J. Fisher.
Kew, Observatory			30.10	764.5	58.9	14.9		W	10	4.5			5					D. clouds	The Staff.
Kingstown	30.05	763.3	30.08	764.0	56	13.3		WNW			3		8			Blank	Blank	Overcast	George Mitchell.
Leicester, Museum			30.07	763.8	59.3	15.2		W			3		4					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.95	760.7	30.03	762.7	87.8	31.0		NE			1		0					Blue sky	Corp'l. P. Bravis, A.H.C.
Nairn	29.77	756.1	29.86	758.4	53	11.7		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	86.0	30.0		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.88	758.9	30.06	763.5	64.4	18.0		WSW			4		4k		W	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.55	750.6	30.07	763.8	59.0	15.0		SW			3		3					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.09	764.3	61	16.1		W			2		4					D. clouds	F. Lucas
Plymouth			30.15	765.8	61.5	16.4		W			3		8					D. clouds	John Merrifield.
Roche's Point	30.06	763.5	30.11	764.8															W. Kennedy.
Saint Ann's Head	29.96	761.0	30.13	765.3	58	14.4		W			3		5					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			29.81	757.2	50.2	10.1		NW	25	11.2			2					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.88	758.9	82.2	27.9		SW			1		4					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.76	755.9	30.00	762.0	58.8	14.9		W			2		3			1.089	27.66	Blue sky	W. F. Cooper.
Silloth Rectory	29.94	760.5	29.97	761.2	61.7	16.5	68	W			5		2			0.145	3.69	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					55.2	12.9		SW			3		8					D. clouds	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C., (Hebr.)			29.84	757.9	48	8.9		NW			2		8					D. clouds	John Smith.
Stratfield Turgiss	29.90	759.4	30.11	764.8	62.0	16.7		W			1		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.80	756.9	51	10.6		NW			4		4					D. clouds	John Trotter.
Truro, Royal Institution			30.18	766.6	65	18.3		NW			4		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.09	764.3	58.0	14.4		SW	19	8.5			10					D. clouds	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)					55	12.8		W			6		0			0.05	1.3		Henry Mercer.
Cape Good Hope, Obs'y	30.18	766.6	30.22	767.6	68.3	20.2	68	WNW	5	2.2		0	1						The Staff, for E.J. Stone.
Hobart Town, (Tasmania)			29.63	752.6	49.0	9.4	81	NW			3		4k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.93	760.2	54.0	12.2		W			4		8k			0.15	3.8	Cloudy	Andrew Gibb.
Mauritius, Observatory	30.02	762.5	30.21	767.3	71.4	21.9	80	ENE	11.5	5.1		1	9	Calm	E	0.05	1.3	Overcast	C. Meldrum.
Melbourne, Observatory	29.90	759.4	30.00	762.0	45.0	7.2	91	NNE	6	2.7			0			0.15	3.8	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.91	759.7	54	12.2		NW			4	5	5	NW		0.1	3.		J. Youngclause.
North Unst, (Shetland Is.)			29.57	751.1	50	10.0		N			7	10	10						Robert Burnet.

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

MARINE SERIES. VESSELS.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia, N. 42° 48′, W. 60° 10′.			30.02	762.5	68	2.00		WNW			3		2			1	W	Blue sky	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 47° 40′, W. 51° 35′			29.82	757.4	67	13.9		SW			5		1			3	S	Blue sky	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 50° 25′, W. 25° 25′			30.07	763.8	59	15.0		SW			7		10			3	W	Raining	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
San José	26.26	667.0			66.2	19.0	98	E			1		10n;d		NE	Blank	Blank		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.72	754.8	29.76	756.0	56.8	13.8	59	WNW			6		8						
Fanöe	29.80	756.8	29.82	757.3	53.8	12.1	79	W			6		6						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thershavn, (Faröe)	29.82	757.3	29.85	758.2	45.9	7.7	85	NNW			5		5						
Vestervig	29.53	750.1	29.70	754.4	54.7	12.6	87	WNW			6		4						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.61	752.2	30.17	766.2	68.0	20	67	WSW			3		2		N	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.96	761.0	30.04	763.0	80.6	27	37	N			3		0			0	0	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.58	751.4	30.14	765.5	66.6	19.2	42	NW			2	5c				0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.86	758.4	30.14	765.6	64.6	18.1	43	WNW			1		8		WNW	0	0	Very cloudy	Normal School.
Besançon	29.68	738.5	30.17	766.2	68.7	20.4	56	SW			2		5		SW	0	0	Cloudy	Normal School.
Bourg-en-Bresse	29.24	742.6	30.17	766.3	72.1	22.3	50	N			2		5ck		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.55	750.6	30.09	764.3	66.2	19	63	NW			3		5		W	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.89	759.1	30.11	764.7	62.4	16.9	63	N			2		9		N	0.049	1.25		The Staff.
Carcassonne, Normal School	29.43?	747.6?	29.83?	757.6?	83.5	28.6	60	E			1		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoullé, Director.
Châlons-sur-Marne, N. Sch'l	29.86	758.5	30.18	766.5	68.0	20.0	47	W			3		5n		W	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.74	729.9	30.06	763.4	69.4	20.8	65	N			1		8		W	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.26	743.2	30.13	765.2	62.6	17	43	W			2		2		W	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.96	735.5	30.10	764.5	80.4	26.9	28	NW			4		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.89	759.3	30.10	764.6	65.8	18.8	63	SW			2		5		SW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.85	758.3	30.16	766.1	63.3	17.4	57	NW			2		5		NW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.22	742.3	30.12	765.0	68.0	20	64	SE			4		5k		SE	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.09	764.2	30.19	766.7	68.4	20.2	46	SW			2		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.58	751.2	30.24	768.1	69.3	20.7	88	NW			2		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.11	739.3	30.30	769.6	61.7	16.5	62	NW			1		2		SW	0	0	Slightly cl'dy	Normal School
Nismes, Normal School	29.84	757.9	30.03	762.8	88.5	31.4	52	S			2		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.89	759.2	30.13	765.2	66.9	19.4	39	NW			1		8ck		W	Inap.	Inap.	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.10	764.5	30.13	765.3	72.3	22.4	48	NE			3		2		N	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.07	763.7	30.15	765.9	61.5	16.4	56	NW			2		5		W	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.06	738.2	30.10	764.5	77.4	25.2	63	ENE			1		2		E	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.2	29.84	757.9	80.6	27										0.47	12.		L'Abbé Marchési.
Marseilles, Observatory			29.99	761.8	81.9	27.7	34	W			2–3		1			0	0		The Staff.
Mont-Louis	25.04	636.0	30.35	771.0	65.1	18.4	55	SE	11.2	5.00			5		SW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.85	758.2	30.13	765.2	68.2	20.1	40	NW			2		6		W	0	0		Marié Davy, Director.
Perpignan			30.04	762.9	80.6	27.0	49	E	3.7	1.67			7		SW	0.008	0.2		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.46	545.0			48.2	9.0		SW			2		5					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.68	576.1			54.1	12.3		SW			4		5			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.97	761.3	30.14	765.5	62.8	17.1	50	NW			1		7			0	0		E. Renou.
Toulouse, Observatory	29.40	746.8	30.13	765.2	76.7	24.3	49	N			1		7			0	0		The Staff.
Tours	29.94	760.5	30.14	765.5	66.9	19.4	40	NW			1		5		N	0	0		C. Marquet.
Versailles, (near Paris)			30.14	765.6	67.3	19.6	53	NW			1		7			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.04	763.1	30.07	763.8	68.5	20.3	88	E	4.9	2.2			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 6:50, instead of 6:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. T. Hoh.
Berlin	29.80	756.9	29.97	761.2	66.2	19.0	45	W			5		5			0	0		Prof. Arndt.
Breslau	29.47	748.4	30.00	761.9	65.5	18.6	34	WNW			7		3			0.124	3.16		Royal University Obs'y.
Carlsruhe	29.48	748.8	29.89	759.3	66.6	19.2	54	W			2		2			0	0		Albert Senz.
Cassel	29.45	748.0	30.06	763.5	61.7	16.5	50	WNW			4		4	WSW		0	0		Dr. H. Möhl.
Crefeld	29.89	759.1	30.05	763.2	64.4	18.0	41	W			6		5k			0.08	2.		Director Lose.
Emden	29.91	759.8	29.95	760.7	62.6	17.0	57	W			6		2			0.071	1.8		Prof. Prestel.
Frankfort on the Main	29.75	755.6	30.11	764.7	64.6	18.1	34	W			2		4			0	0		Physical Society.
Friedrichshafen	28.69	728.7	30.09	764.2	68.0	20.0	68	WSW			4		4	NW		0	0		M. Wilhelm.
Hamburg	29.87	758.7	29.94	760.5	56.1	13.4	70	NW			4		5k	WNW		0.091	2.3		Captain F. Hegemann.
Kiel	29.87	758.8	29.89	759.2	55.0	12.8	68	SW			5		8			0.100	2.54		Prof. G. Karsten.
Königsberg, (Prussia)	29.66	753.4	29.74	755.4	63.7	17.6	53	W			3								Prof. E. Luther.
Köslin			29.87	758.6	59.0	15.0		W			6		3			0	0		H. Müller.
Leipsic, Observatory	29.64	752.8	30.05	763.3	64.9	18.3	41	WNW			4		7	NW		0	0		Prof. Bruhns.
Memel, Naval School	29.67	753.7	29.72	754.9	61.7	16.5	69	WSW			6		1k					Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.78	756.4	29.80	756.8	63.5	17.5	59	WSW			4		8			0.295	7.5		A. Lothes.
Posen	29.69	754.1	29.97	761.2	66.4	19.1	37	NW			8		8			Blank	Blank		Dr. Magener.
Strassburg Obs., (in Alsace)	29.60	751.7	30.13	765.4	64.9	18.3	48	N			2		9	SSW		0.019	0.48		Dr. Schur.
Stuttgart	29.15	740.5	30.09	764.2	64.8	18.2	49	NW			3		6	W		0	0		Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.58	726.0	30.06	763.4	64.0	17.8	43	NW			5		5	NW		0.028	0.7		Dr. Von Bebber.
Wustrow, Naval School	28.87	758.7	29.91	759.7	58.8	14.9	71	WSW			6		10			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.60	751.9	29.95	760.8	86.0	30.0		SW					c					Clear.	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.56	750.7	29.60	752.0	83.1	28.4	81	WSW	46.0?	20.6?			4			0	0	D. clouds	
Deesa																			
Bombay	29.68	753.9	29.72	754.9	82.2	27.9	86	W	16.0	7.2			7	SW	NNW	2.86	72.4	Misty	
Poona	27.67	702.8	29.67	753.5	76.4	24.7	80	W					10		W	0	0	Strong wind	
Lahore	28.88	733.6	29.59	751.6	101.2	38.4	37	E	3.5	1.6			6			0	0	Cloudy	
Belgaum	27.27	692.7	29.83	757.7	70.9	21.6	87	W	17.0	7.6			10		W	0.01	0.3	Drizzling	
Bangalore																			
Roorkee	28.79	731.2	29.67	753.5	89.8	32.1	61	Calm	2.7	1.2			9			0	0		
Agra	29.04	737.6	29.58	751.4	92.7	33.7	50	E					4		E	0	0		
Trichinopoly																			
Nagpur	28.58	725.9	29.62	752.3	78.6	25.9	93	Calm	3.8	1.7			8			0.47	11.9	Gloomy	
Madras																			
Lucknow	29.26	743.3	29.63	752.5	91.2	32.9	57	SE	10.1	4.5			3	W		0	0	Misty	
Allahabad	29.30	744.1	29.60	751.8	87.5	30.8	77	NE	7.5	3.4			4			0.47	11.9	Thunder, lightn'g	
Patna	29.50	749.2	29.68	753.8	87.2	30.7	72	E	2.1	0.9			8	E	E	0.02	0.5	D. clouds	
Hazaribagh	27.70	703.6	29.71	754.7	76.3	24.6	88	SE	13.4	6.0			4		E	0.04	1.0	Showery	
Cuttack	29.59	751.6	29.67	753.6	83.0	28.3	86	S	1.6	0.7			9			0.29	7.4	Showery	
Calcutta (Alipore)	29.70	754.5	29.73	755.0	79.7	26.5	94	WNW	4.0	1.8			2	SE		0.15	3.8	Raining	
Goalpara	28.33	745.0	29.72	754.8	83.4	28.6	76	Calm	1.5	0.7			10	NE		0	0	Thunder, lightn'g	
Chittagong	29.67	753.5	29.76	755.8	84.3	29.1	81	W	8.2	3.7			3			0	0	Blue sky	
Sibsagar	29.40	746.8	29.73	755.1	87.7	30.9	74	Calm	2.0	0.9			7	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.26	717.7	29.62	752.2	78.3	25.7	87	SE	7.1	3.2			9	SE	SE	0.17	4.3	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Valdobbia	22.33	567.1	29.95	760.7	67.1	19.5	62	W			6		6	WNW		0	0		Ab. Dom. Morgini.
Stelvio	22.27	565.6	29.89	759.1	52.0	11.1		WNW			4		6	E		0.807	20.5		Signora Ernesta Manfredi.
Udine	29.54	750.2	29.93	760.3	70.5	21.4	77	S	8.1	3.6			10			0.283	7.2		Prof. Giovanni Clodig.
Padua	29.80	757.0	29.91	759.7	79.7	26.5	59	S	1.3	0.6			4	SW		0.299	7.6		Prof. Dott. Lorenzoni.
Vicenza	29.71	754.7	29.90	759.4	80.4	26.9	56	NE	0.7	0.3			1	W		0.118	3.0		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.04	727.5	29.91	759.8	83.5	28.6	55	S			2		5			0.425	10.8		Prof. Trionfini Carlo.
Domodossola	28.89	733.7	29.87	758.8	77.0	25.0	54	S			6		7			0.098	2.5		Prof. Giuseppe Calza.
Milan	29.45	748.0	29.94	760.5	84.7	29.3	59	W			2		7	SW		0.441	11.2		Ab. Gio. Capelli.
Pavia	29.56	750.9	29.89	759.3	82.4	28.0	58	NW			2		3	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.02	737.2	29.89	759.3	81.7	27.6	50	N	1.3	0.6			4	E		0	0		Prof. P. F. Denza.
Mondovi	28.04	712.1	29.87	758.6	82.9	28.3	49	SE			4		3	ESE		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.73	755.1	29.94	760.5	79.5	26.4	74	E			6		3			0	0		Prof. L. Vassallo.
Genoa	29.77	756 2	29.93	760.3	83.1	28.4	61	SE	9.4	4.2			4			0.008	0.2		Prof. G. M. Garibaldi.
Piacenza	29.65	753.2	29.89	759.3	82.9	28.3	53	N			2		5			0	0		Dott. G Manzi.
Parma	29.59	751.5	29.89	759.1	86.0	30.0	52	ENE			4		6			0	0		Prof. P. Pigorini.
Florence	29.72	754.8	29.96	761.0	86.9	30.5	41	SW			2		4	SW		0	0		Cav. F Meucci.
Leghorn	29.87	758.7	29.95	760.8	85.8	29.9	43	SW	1.3	0.6			4			0	0		Prof. P. Monte.
Siena	28.80	731.4	29.96	761.0	87.8	31.0	36	SSW	1.3	0.6			7	W		0	0		Prof. L. Toscani.
Urbino	28.46	722.8	29.95	760.7	84.2	29.0	43	SSW			2		5			0	0		Prof. P. Serpieri.
Pesaro	29.90	759.4	29 95	760.6	82.6	28.1	64	ENE	19.2	8.6			10	SW		0	0		Prof. Luigi Guidi.
Ancona	29.82	757.4	29.92	760.0	87.3	30.7	54	SE			4		2			0	0		Prof. F. DeBosis.
Grosseto	29.87	758.7	29.98	761.4	90.7	32.6	70	SW			2		3	S		0	0		Avv. P. Ponticelli.
Rome	29.84	757.8	30.00	762.1	87.4	30.8	46	SW	9.8	4.4			1			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.86	758.4	30.05	763.3	86.7	30.4	64	SSW			4		2	W		0	0		Prof. L. Palmieri.
Lecce	29.73	755.1	29.97	761.2	90.1	32.3	32	SW	18.6	8.3			4	SW		0	0		Prof. O. DeGiorgi.
Cosenza	29.17	740.8	30.00	762.1	89.4	31.9	36	NNW	7.4	3.3			0			0	0		Prof. F. D. Conti.
Cagliari	29.72	755.0	29.91	759.6	91.4	33.0	40	S			2		0			0	0		Prof A. Pacinotti.
Riposto, (Sicily)	29.92	759.9	29.97	761.1	85.5	29.7	66	SE			2		4			0	0		Prof. F. Cafiero.
Palermo	29.75	755.7	29.99	761 8	85.8	29.9	50	ENE	5.6	2.5			0			0	0		Prof. G. Cacciatore.
Caltanissetta	28.12	714.1	29.95	760.8	86.0	30.0	21	S			2		0			0	0		Prof. A. Pagani.
Syracuse	29.88	758.9	29.95	760.8	88.5	31.4	63	NE			2		2	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.51	749.6	30.07	763.7	85.0	29.8	61	SSW	4.3	1.9			4	W		0	0		Prof. F. Brioschi

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	30.03	762.7	30.10	764.5	75	23.9	81	S	1.5	0.7						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.16	588.2	30.17	766.2	54.0	12.2	89	NW	1.2	0.55		0	5k		E	0.21	5.7	Foggy	Mariano Bárcena. Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	30.12	765.0	30.12	765.0	61.9	16.6		W			4					0.295	7.5		
Groningen	29.93	760.3	29.99	761.7	58.8	14.9		NW			2					0.161	4.1		
Helder	30.01	762.2	30.01	762.2	58.1	14.5		W			4					0.130	3.3		
Utrecht	30.02	762.6	30.07	763.8	63.9	17.7	55	WSW			4		5			0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.29	744.0	29.35	745.4	51.4	10.8	90	NW	2.9	1.3			10			1.118	28.4	Raining	
Brönö	29.32	744.6	29.35	745.6	59.0	15.0	49	E	4	2			6			0	0		
Christiania	29.24	742.6	29.38	746.2	59.5	15.3	62	SSW	9	4			9			0	0		
Tromsö	29.50	749.4	29.53	750.1	48.6	9.2	61	Calm	0	0			0			0	0		

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

PORTUGUESE SERIES.

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

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.97	761.2	30.16	766.0	71.4	21.9	82	ENE	12.5	5.6			6			0	0		Dr. J. A. Sampaio
Campo Major	29.10	739.1	30.09	764.2	79.7	26.5	40	SW	0.7	0.3			9	WNW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.97	761.3	30.06	763.5	79.5	26.4	78	SSE	3.8	1.7			8			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.74	755.5	30.10	764.4	70.7	21.5	69	WSW	2.5	1.1			10			0	0		The Staff.
Ponta Delgada, (Azores)	30.06	763.4	30.13	765.2	72.7	22.6	77	E					10			0.063	1.6		

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

Naval Series. Vessels.	Sea or swell: Height scale 0-6	Sea or swell: Direction from—	
S. S. India			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

RUSSIAN SERIES.

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

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer: Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Warsaw	29.47	748.5	29.88	759.0	64.0	17.8	72	WSW	13	6			9						Astronomical Obs.
Wilna	29.32	744.8	29.73	755.1	65.8	18.8	68	W	2	1			10						Astronomical Obs.
Dorpat	29.39	746.4	29.62	752.4	60.3	15.7	77	S	9	4			7						Physical Cabinet.
St. Petersburg	29.60	751.8	29.61	752.2	62.1	16.7	72	WSW	4	2			10					Light rain	Central Physical Obs
Kuopio	29.20	741.6	29.51	749.5	54.3	12.4	94	S	13	6			10						Ch. Forsten.
Kieff	29.14	740.1	29.73	755.2	80.8	27.1	59	WSW	7	3			2						Physical Cabinet.
Nikolaiev	29.89	759.3	29.97	761.1	88.5	31.4	34	S	9	4			0						Kurdakof.
Kertch	29.96	761.0	29.98	761.5	80.8	27.1	45	ENE	7	3			0						Lagorio.
Moscow	29.30	744.2	29.84	757.9	59.4	15.2	90	S	9	4			10					Raining	Meteorological Obs
Lugan	29.71	754.7	29.91	759.7	81.1	27.3	36	SE	4	2			1						Meteorological Obs
Archangel	29.65	753.1	29.67	753.6	49.8	9.9	74	W	9	4			10						Ogorodnikof.
Tiflis	28.58	725.9	29.91	759.6	89.6	32.0	40	SE	9	4			6						Physical Observatory.
Astrakhan	30.13	765.4	30.05	763.3	76.1	24.5	47	N	2	1			0						Sebastianof.
Kasan	29.60	751.7	29.86	758.4	63.3	17.4	48	W	4	2			4						Physical Cabinet.
Orenburg	29.63	752.7	30.00	762.1	56.5	13.6	82	NE	7	3			3						Tschernischei.
Ekaterinburg	28.71	729.1	29.63	752.6	55.8	13.2	64	WNW	18	8			10						Meteorological Obs
Nukuss	29.68	753.9	29.90	759.5	87.1	30.6	37	NNE	0	0			0						
Kasaly																			Bobrof.
Tashkend	28.38	720.9	30.03	762.7	73.8	23.2	64	Calm	0	0			0						Micheison.
Barnaul	29.23	742.5	29.73	755.2	64.9	18.3	60	SE	0	0			10						Meteorological Obs.
Yeniseisk	29.38	746.2	29.52	749.9	60.8	16.0	81	SW	2	1			1					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.86	758.5	30.00	762.1	70.3	21.3	66	Calm	0	0			2						Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					51.6	10.9	89	Calm	0	0			0						

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

SPANISH SERIES.

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

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer: Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.89	708.4			72.9	22.7	54	SW	17.2	7.67		0	10			0	0	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.98	761.4	30.06	763.5	80.7	27.1	84	Calm	0	0		1cs	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.02	762.6	30.12	765.0	79.3	26.3	72	SSE	14.8	6.6		0	10		SW	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.94	760.4	83.1	28.4	83	S				5cs	1k	S	S	0.305	7.75	Clear	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer: Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.52	749.9	29.56	750.9	53.6	12.0	76	NE			4		10			0	0		
Umea	29.41	747.1	29.47	748.4	53.2	11.8	48	S			2		8			0.205	5.2		
Hernosand	29.34	745.1	29.39	746.4	53.6	12.0	100	S			4		10			0	0		
Stockholm	29.29	743.9	29.86	758.4	57.2	14.0	67	SW			2		8			0.016	0.4		
Wisby	29.47	748.6	29.53	750.1	56.5	13.6	82	W			6		7			0.016	0.4		
SUB-SERIES.																			
Upsala	29.39	746.4	29.46	748.3	57.0	13.9	68	S	11.2	5.0			9	SW	SW	0.368	9.36		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.68	728.4	30.06	763.4	70.7	21.5	48	N			1		4			0	0	Cloudy	The Observatory.
Zurich	28.50	723.8	30.09	764.3	67.1	19.5	64	W			2		3			0.138	3.5	Bright	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +0.9 mm; Thermometer, +1.4 cent.; Relative Humidity, —11 per cent.

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

TURKISH SERIES.

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

Constantinople			29.95	760.6	80.2	26.8	62	S	2	1.0			5		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.01	762.3	85.1	29.5		S			3		0						B. Stéfanidés.
Valona			30.12	765.0	90.0	32.2		SW			2		0			0	0	Clear	A. Bertrand.
Varna			29.88	759.0	80.6	27.0		NE			3		0						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.81	757.2	29.92	759.9	90.0	32.2	59	WSW			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B	29.63	752.6	29.70	754.4	61.6	16.4	89	SW	17	7.6									Hon. J. Ferguson.
Brockville, Ontario			29.80	756.9	63	17.2		N	1	0.4		0	2s		N	0	0	Fair	W. R. Bigg.
*Chatham, N. B			29.72	754.9	60	15.6	88	SW	6	2.7			10s		SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.85	758.2	64	17.8	66	S	13	5.8		8cs	0	Calm		0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.55	750 6	29.74	755.4	59.9	15.5	75	NW			1	0	3s			0	0	Fair	James Smith, M. A.
Dalhousie, N. B	29.60	751.8	29.63	762.6	60.5	15.8	95	E			2					0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.98	761.5	30.02	762.5	53.2	11.8	100	Calm				0	0			0	0	Hazy	W. H. Bevis.
*Father Point, Quebec			29.56	750.8	62	16.7	88	S	24	10.7		5k	5n	SW	SW	0.11	2.8	Light rain	J. McWilliams.
Fredericton, N. B	29.68	753.9	29.74	755.4	63.0	17.2	89	SE	12	5.4			10			0.02	0.5	Misty	Prof. Harrison.
*Fort Garry, Manitoba			30.30	769.6	42	5.6	97	NW	5	2.2		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.15	740.4	29.91	759.7	58.9	14.9	83	N			2	4k	0	N		0	0	Clearing	H. J. Strang, M. A.
Granton, Ontario	28.84	732.5	29.92	760.0	55	12.8	87	NW			1	0	0			0.93	23.6	Clear	James Grant.
*Halifax, N. S	29.75	755.6	29.88	758.9	66	18.9	77	SW	10	4.5		5cs	2ks		SW	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.54	750.3	29.90	759.4	60.2	15.7	57	N			2	1c	0	S		0.94	23.9	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.72	754.9	29.75	755.6	61	16.1	71	W			5	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.46	748.3	29.82	757.4	61	16.1	79	NE	5	2.2		2k	0	NE		0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.51	749.5	29.70	754.4	62	16.7	73	N	12	5.4		0	5ks			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.23	742.4	29.92	760.0	50	10.0	89	N	4	1.8		0	0			0.29	7.4	Clear	Rev. R Mosley
Peterboro, Ontario	29 10	739.1	29.83	757.7	59.5	15.3	70	W			4	1k	0			0.10	2.5	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.20	741.7	29.88	758.9	60	15.6	82	N	7	3.1		5k	0	W		1.29	32.8	Fair	H. Morgan.
Port Hastings, N. S	29.85	758.2	29.90	759 4	65.0	18.3		SW	3	1.3						Inap.	Inap.	Fine	Peter Grant
Port Stanley, Ontario	29.27	743.4	29.90	759.4	59	15.0	94	W	4	1.8		10k	10k	NW	NW	2.62	66.5	Cloudy	M. Payne.
*Quebec, Quebec	29.29	744.0	29.60	751.8	66	18.9	84	SW	5	2.2			10n		SW	0.04	1.0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.41	747.0	29.86	758.4	55	12.8	77	NW	6	2.7		0	2s		NW	0.83	21.1	Fair	W. H. McIntyre.
St. John, N. B	29.66	753.4	29.82	757.4	59	15.0	94	S	7	3.1			10n			0.23	5.8		G. Murdock, C. E.
*Saugeen, Ontario	29.22	742.2	29.91	759.7	58	14.4	74	N	4	1.8		5k	0	N		0.15	3.8	Fair	K. Stewart.
Stayner, Ontario			29.88	758.9	56	13.3	63	N	5	2.2		2k	0	N		0.22	5.6	Fair	R. J. Cole.
Stratford, Ontario	28.68	728.5	29.94	760.5	54.1	12.3	84	NW	6	2.7		1c	2s	NW		0.974	24.74	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.88	758.9	29.91	759.7	68	20.0	68	SW	6	2.7		8c	0	NW		0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.50	749.3	29.88	758.9	58	14.4	73	NW	14	6.3		2cs	0	W		0.29	7.4	Clear	Magnetic Observatory.
Windsor, N S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					64.5	18.1	73	W				2c	2s			0	0	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.52	749.8	29.73	755.1	68	20.0	84	S	4	1.8			10s		Calm	0.03	0.8	Cloudy	
Alpena, Michigan	29.30	744.2	29.95	760.7	52	11.1	79	NW	7	3.1		0	0			0.03	0.8	Clear	
Atlantic City, New Jersey	29.80	756.9	29.82	757.4	76	24.4	90	SW	7	3.1		8c	2s	SW	SW	0	0	Cloudy	
Augusta, Georgia	29.78	756.4	29.96	761.0	78	25.6	82	SE	2	0.9		0	0			0	0	Clear	
Baltimore, Maryland	29.78	756.4	29.83	757.7	75	23.9	59	NW	4	1.8		2c	5sism	NW	NW;Calm	Inap.	Inap.	Cloudy	
Barnegat, New Jersey	29.78	756.4	29.80	756.9	78	25.6	82	W	6	2.7		8cs	0	SW		0	0	Fair	
Bismarck, Dakota	28.52	724.4	30.24	768.1	45	7.2	76	S	3	1.3		0	Sm'e		S	0	0	Smoky	
Boise City, Idaho	27.23	691.6	29.82	757.4	52	11.1	72	NE	2	0.9		2ck	5s	Calm	Calm	0	0	Fair	
Boston, Massachusetts	29.57	751.1	29.72	754.9	73	22.8	85	SW	11	4.9			10s		W	Inap.	Inap.	Cloudy	
Brackettville, Texas	28.90	734.0	29.89	759.2	76	24.4	76	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	29.27	743.4	30.30	769.6	40	4.4	100	N	6	2.7		0	0			0	0	Clear	
Brownsville, Texas	29.96	761.0	30.03	762.7	76	24.4	95	Calm	0	0		5cs	Sm'e	Calm		0.08	2.0	Fair	
Buffalo, New York	29.12	739.6	29.86	756.9	61	16.1	94	N	8	3.6			10s		N	1.20	30.5	Cloudy	
Burlington, Vermont	29.46	748.3	29.71	754.6	67	19.4	84	S	4	1.8			10n		Calm	0.32	8.1	Heavy rain	
Cairo, Illinois	29.68	753.9	30.06	763.5	70	21.1	90	S	9	4.0			10n		Calm	0.25	6.3	Light rain	
Camp Grant, Arizona								W				4cs	0	SW		0	0	Fair	
Camp Verde, Arizona	26.71	678.4	30.21	767.3	72	22.2	26	Calm	0	0			10s		W	0	0	Cloudy	
Campo, California			29.92	760.0	63	17.2	36	SW	12	5.4		2k	0	SW		0	0	Fair	
Cape Hatteras, N. Carolina	29.88	758.9	29.89	759.2	80	26.7	82	SW	16	7.2		5cs	0	W		0	0	Fair	
Cape Henry, Virginia	29.86	758.4	29.88	758.9	76	24.4	81	SW	22	9.8		5k	0	SW		0	0	Fair	
Cape Lookout, N. Carolina	29.94	760.5	29.96	761.0	84	28.9	71	S	12	5.4		8c	0	NW		0	0	Fair	
Cape May, New Jersey	29.78	756.4	29.81	757.2	76	24.4	48	SW	7	3.1		1c	0	W		0	0	Clear	
Charleston, South Carolina	29.94	760.5	30.00	762.0	83	28.3	74	S	4	1.8		0	0			0.04	1.0	Clear	
Cheyenne, Wyoming	24.25	615.9	30.19	766.8	50	10.0	93	NE	9	4.0		1c	2k	Calm	N	Inap.	Inap.	Fair	
Chicago, Illinois	29.34	745.2	30.01	762.2	62	16.7	61	W	4	1.8			10s		W	0.12	3.0	Cloudy	
Cincinnati, Ohio	29.22	742.2	29.83	757.7	72	22.2	80	NW	12	5.4			10ks		NW	2.73	69.3	Cloudy	
Cleveland, Ohio	29.21	741.9	29.91	759.7	62	16.7	83	S	2	0.9		0				0	0	Clear	
Concho, Texas	28.15	715.0	29.78	756.4	72	22.2	75	S	4	1.8		5k	0	W		0	0	Fair	
Corsicana, Texas	29.58	751.3	30.04	763.0	74	23.3	90	NE	4	1.8		9cs	0	Calm		Inap.	Inap.	Fair	
Davenport, Iowa	29.45	748.0	30.07	763.8	65	18.3	83	S	6	2.7		0	0			0	0	Clear	
Denison, Texas	29.25	742.9	30.01	762.2	77	25.0	76	SE	4	1.8		5ck	0	NW		0	0	Fair	
Denver, Colorado	25.00	635.0	30.22	767.6	55	12.8	68	NW	8	3.6		0	0			2.02	51.3	Clear	
Detroit, Michigan	29.26	743.2	29.92	760.0	53	11.7	86	NE	12	5.4		5k	0	NE		0	0	Fair	
Dodge City, Kansas	27.46	697.5	29.67	753.6	67	19.4	79	NE	3	1.3		2c	0	NE		0	0	Fair	
Dubuque, Iowa	29.38	746.2	30.07	763.8	59	15.0	81	NW	16	7.2		5k		N		0	0	Fair	
Duluth, Minnesota	29.47	748.5	30.15	765.8	51	10.6	72	SE	4	1.8		1c	0	Calm		Inap	Inap.	Clear	
Eagle Pass, Texas	29.25	742.9	29.96	761.0	76	24.4	81	S	14	6.3			10s		S	0.11	2.8	Threatening	
Eastport, Maine	29.68	753.9	29.74	755.4	60	15.6	94	NE	8	3.6			10n		N	1.37	34.8	Light rain	
Erie, Pennsylvania	29.14	740.1	29.83	757.7	62	16.7	94	NW	10	4.5		2k	0	NW		0	0	Clear	
Escanaba, Michigan	29.39	746.5	30.02	762.5	52	11.1	66	W				0	0			0	0	Clear	
Florence, Arizona	28.27	718.0	29.87	758.7	82	27.8	26	N	4	1.8		0	0			Inap.	Inap.	Clear	
Fort Bayard, New Mexico	24.16	613.6	30.16	766.1	61	16.1	40	E	1	0.4		0	0			0	0	Clear	
Fort Craig, New Mexico	25.61	650.5			64	17.8	49	E	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.45	748.0	29.97	761.2	73	22.8	81	Calm	0	0		0	0			0	0	Clear	
Fort Griffin, Texas	28.77	730.7	29.99	761.7	75	23.9	72												
Fort St. Michael, Alaska								Calm	0	0		5k	0	NW		0	0	Fair	
Fort Sill, Indian Territory	28.79	731.3	29.85	758.2	74	23.3	72	Calm	0	0		0	0			Inap.	Inap.	Clear	
Fort Sully, Dakota	28.60	726.4	30.28	769.1	49	9.4	85	SE	2	0.9		2k	0	SE		0	0	Fair	
Galveston, Texas	30.02	762.5	30.06	763.5	83	28.3	74	NE	8	3.6		0	0			0	0	Clear	
Grand Haven, Michigan	29.37	746.0	30.02	762.5	54	12.2	68	N	9	4.0			10s		N	0.14	3.6	Threatening	
Indianapolis, Indiana	29.17	740.9	29.92	760.0	67	19.4	90	S	1	0.4		0	Haze		Calm	0	0	Clear	
Indianola, Texas	30.04	763.0	30.07	763.8	82	27.8	78	SW	3	1.3		0	0			0	0	Clear	
Jacksboro, Texas	28.88	733.5	29.96	761.0	76	25.6	65	S	10	4.5		0	0			0	0	Clear	
Jacksonville, Florida	30.02	762.5	30.04	763.0	80	26.7	78	NE	6	2.7		2ck	2s	W	Calm	0	0	Fair	
Keokuk, Iowa	29.40	746.7	29.99	761.7	68	20.0	79	NE	3	1.3		0	5ks		N	0.51	13.0	Fair	
Key West, Florida	30.01	762.2	30.05	763.3	84.0	28.9	75	SW	16	7.2		0	2s		SW	0	0	Fair	
Kittyhawk, North Carolina	29.90	759.4	29.92	760.0	78	25.6	86	Calm	0	0			10ks		W	0	0	Cloudy	
Knoxville, Tennessee	28.98	736.1	29.94	760.5	71	21.7	85	N	9	4.0		0	0			0.02	0.5	Clear	
La Crosse, Wisconsin	29.38	746.2	30.11	764.8	54	12.2	79	Calm	0	0		0	0			0	0	Clear	
La Mesilla, New Mexico	26.12	663.4	30.27	768.8	71	21.7	57	SE	2	0.9		5c	0	N		0	0	Fair	
Laredo, Texas					80	26.7	82	NE	4	1.8			10n		Calm	0.28	7.1	Light rain	
Leavenworth, Kansas	29.16	740.7	29.98	761.5	66	18.9	84	NE	6	2.7			10s		NE	Inap.	Inap.	Cloudy	
Los Angeles, California	29.53	750.0	29.85	758.2	72	22.2	45	NW	6	2.7		2ck	8s	NW	NW	0.44	11.2	Cloudy	
Louisville, Kentucky	29.39	746.5	29.93	760.2	71	21.7	70	W	4	1.8		5c	0	W		0	0	Fair	
Lynchburg, Virginia	29.21	741.9	29.85	758.2	79	26.1	65	N				2ck	0	N		0	0	Fair	
Maricopa Wells, Arizona					72	22.2	26	W	8	3.6			0			0	0	Clear	
Marquette, Michigan	29.30	744.2	30.00	762.0	54	12.2	61	S	2	0.9			2s			Inap.	Inap.	Fair	
Mason, Texas	28.42	721.9	30.11	764.8	75	23.9	76	SW	3	1.3			10s		SW	0	0	Cloudy	
Memphis, Tennessee	29.70	754.4	30.00	762.0	79	26.1	82	N	8	3.6		2c	Haze	NW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.41	747.0	30.09	764.3	56	13.3	68	SW	1	0.4		5ck	0	Calm		0	0	Fair	
Mobile, Alabama	30.02	762.5	30.06	763.5	80.5	26.9	84	W	4	1.8		0	Haze		Calm	0	0	Clear	
Montgomery, Alabama	29.79	756.7	30.01	762.2	78.5	25.8	73	S	2	0.9			10s		SW	0.87	22.1	Cloudy	
Morgantown, West Virginia	28.79	731.3	29.79	756.7	70	21.1	79	NW	36	16.1			Fog	NW		0.18	4.6	Foggy	
Mt. Washington, N. H.	23.66	601.0	30.02	762.5	48	8.9	100	SW	5	2.2			10n		W	1.08	27.4	Light rain	
Nashville, Tennessee	29.48	748.8	29.99	761.7	71	21.7	90	W	6	2.7			10s		SW	0.12	3.0	Cloudy	
New Haven, Connecticut	29.67	753.6	29.78	756.4	75	23.9	76	SW	6	2.7		2ck	5s	W	W	0.15	3.8	Fair	
New London, Connecticut	29.71	754.6	29.76	755.9	75	23.9	90	W	5	2.2		4k	0	NW		0	0	Fair	
New Orleans, Louisiana	30.02	762.5	30.07	763.8	80	26.7	82	SW	12	5.4			10ks		SW	0.04	1.0	Threatening	
Newport, Rhode Island	29.73	755.1	29.78	756.4	72	22.2	90	SW	6	2.7			10s		SW	Inap	Inap.	Cloudy	
New York, New York	29.63	752.6	29.80	756.9	70	21.1	75	SW	12	5.4		1c	Haze	Calm	Calm	1.70	43.2	Fair	
Norfolk, Virginia	29.83	757.7	29.88	758.9	75	23.9	90	NE	8	3.6		0	0			0	0	Clear	
North Platte, Nebraska	27.30	693.4	29.86	758.4	55	12.8	79	E	2	0.9		0	Fog		Calm	0	0	Clear	
Olympia, Washington Ter.	29.97	761.2	30.01	762.2	51	10.6	93	N	11	4.9			10s		NW	0	0	Cloudy	
Omaha, Nebraska	29.06	738.1	30.13	765.3	58	14.4	81	N	13	5.8			10n		Calm	0.62	15.7	Light rain	
Oswego, New York	29.48	748.8	29.78	756.4	64	17.8	73	NW	4	1.8		2c	0	NW		0	0	Clear	
Pembina, Dakota	29.47	748.5	30.33	770.4	36	2.2	95	NW	3	1.3		1cs	8s	Calm	NW	0	0	Cloudy	
Philadelphia, Pennsylvania	29.77	756.1	29.81	757.2	75	23.9	63	Calm				5cs	0	SW		0	0	Clear	
Phœnix, Arizona					76	24.4	20	SW	6	2.7		2cs	2s	SW	Calm	0	0	Fair	
Pike's Peak, Colorado	18.12	460.2	30.33	770.4	35	1.7	61	Calm	0	0			10s		Calm	0	0	Threatening	
Pioche, Nevada	24.18	614.2	29.94	760.5	67	19.4	29	NW	4	1.8			10s		NW	1.42	36.1	Cloudy	
Pittsburg, Pennsylvania	29.04	737.6	29.81	757.2	64	17.8	94	NW	8	3.6		5k	0	NE		1.12	28.4	Fair	
Port Huron, Michigan	29.25	742.9	29.90	759.4	56	13.3	80	SW	8	3.6		10k	Haze	W		0.07	1.8	Cloudy	
Portland, Maine	29.64	752.8	29.69	754.1	68	20.0	95	W	1	0.4			Fog		Calm	0	0	Foggy	
Portland, Oregon	29.94	760.5	30.04	763.0	55	12.8	100	S				5c	0	S		0	0	Fair	
Prescott, Arizona					59	15.0	4	E	4	1.8		0	0			0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	81	27.2	74	N	7	3.1		0	0			0	0	Clear	
Red Bluff, California	29.58	751.3	29.93	760.2	64	17.8	34	N	8	3.6			10n		NE	0.35	8.9	Light rain	
Rochester, New York	29.18	741.2	29.77	756.1	62	16.7	88												

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.45	748.0	30.01	762.2	53	11.7	82	N	1	0.4		0	0			0	0	Clear	
Sacramento, California	29.83	757.7	29.91	759.7	61	16.1	66	SW	1	0.4		0	0			0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.97	761.2	73	22.8	85	S	4	1.8			10s		Calm	1.43	36.3	Cloudy	
St. Marks, Florida	30.02	762.5	30.03	762.7	77	25.0	95	SW	1	0.4		0	0			0	0	Clear	
St. Paul, Minnesota	29.33	745.0	30.16	766.1	47	8.3	85	NW	6	2.7		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.73	653.5	30.06	763.5	71	21.7	40	Calm	0	0			10s		Calm	0	0	Cloudy	
San Antonio, Texas	29.35	745.5	29.91	759.7	75	23.9	90	Calm	0	0		5c	0	Calm		0.01	0.3	Fair	
San Diego, California	29.82	757.4	29.89	759.2	69	20.6	70	NW	5	2.2			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.29	744.0	29.95	760.7	61	16.1	77	NW	16	7.2		0	5ks		NW	2.94	74.7	Fair	
Sandy Hook, New Jersey	29.77	756.1	29.79	756.7	74	23.3	68	W	13	5.8			10ks		W	Inap	Inap.	Cloudy	
San Francisco, California	29.92	760.0	29.99	761.7	56	13.3	93	W	4	1.8			Fog		W	0	0	Foggy	
Santa Fé, New Mexico	23.45	595.6	29.99	761.7	64	17.8	38	SE	2	0.9		1cs	5s	Calm	Calm	0	0	Fair	
Savannah, Georgia	29.91	759.7	30.00	762.0	83	28.3	70	SW	7	3.1		2ck	Haze	SW		0	0	Fair	
Shreveport, Louisiana	29.83	757.7	30.04	763.0	81	27.2	70	Calm	0	0			0			0	0	Clear	
Smithville, North Carolina	29.97	761.2	30.00	762.0	82	27.8	74	SW	18	8.0		0	5ks		SW	0	0	Fair	
Springfield, Massachusetts	29.56	750.8	29.69	754.1	71	21.7	75	S	3	1.3			10s		S	0	0	Cloudy	
Stanwix, Arizona					70	21.1	56	SW				0	0			0	0	Clear	
Stockton, Texas					68	20.0	69	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass	29.67	753.6	29.72	754.9	70	21.1	95	SW	8	3.6		2k	5s	W	W	0	0	Fair	
Toledo, Ohio	29.29	744.0	29.95	760.7	58	14.4	69	W	8	3.6		0	2s		Calm	1.78	45.2	Fair	
Tucson, Arizona	27.50	698.5	30.06	763.5	75	23.9	36	S				0	0			0	0	Clear	
Tybee Island, Georgia	29.97	761.2	30.00	762.0	80	26.7	86	SW	8	3.6		5c	0	SW		0	0	Fair	
Umatilla, Oregon	29.79	756.7			59	15.0	57	SE	4	1.8		2ck	0	Calm		0	0	Clear	
Vicksburg, Mississippi	29.82	757.4	30.07	763.8	79	26.1	78	Calm	0	0		0	0			0	0	Clear	
Virginia City, Montana	24.45	621.0	29.93	760.2	52	11.1	59	SE	10	4.5		0	0			0	0	Clear	
Visalia, California	29.56	750.8	29.92	760.0	65	18.3	48	Calm	0	0			9s		Calm	0	0	Cloudy	
Washington, D. C.	29.72	754.9	29.83	757.7	75	23.9	69	SW	1	0.4		2ck	5ks	W	SW	0	0	Fair	
Wickenburg, Arizona					68	20.0	45	S				0	0			0	0	Clear	
Wilmington, N. Carolina	29.90	759.4	29.98	761.5	80	26.7	82	SW	8	3.6		5k	0	SW		0	0	Fair	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	55	12.8	27	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Mass	29.74	755.4	29.80	756.9	75	23.9	85	SW	12	5.4		0	2s		SW	0	0	Fair	
Yankton, Dakota	28.98	736.1	30.29	769.4	48	8.9	85	NW	7	3.1		8cs	0	NW		Inap.	Inap.	Fair	
Yuma, Arizona	29.63	752.6	29.79	756.7	75	23.9	56	Calm	0	0		2ck	0	W		0	0	Fair	
Sub-Series.																			
York Factory, B. A.	30.10	764.5	30.16	766.1	41.5	5.3	96	N	22	9.8			9s			0	0	Cloudy	J. Fortescue, W. Wood.
Havana	30.01	762.2	30.03	762.7	84	28.9	79	NE	2.4	1.1		hzcs	0	S		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.17	766.3	30.18	766.6	79	26.1	82	Calm	0	0		8c	2n	Calm		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.90	759.4	29.98	761.5	83	28.3		E			1					0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.			30.06	763.5	83	28.3	79	E			2	0	5k			0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.26	641.6			66.0	18.9	77	Calm			0	6ck;cs	0			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.09	764.3	30.11	764.8	72.5	22.5		NE			3					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,566 (?) ft., or 1,086.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.8 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,530 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The elevation of Batavia is about 6 feet; the barometric readings need the addition of 0.2 mm., or 0.01 in., for reduction to sea-level. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer: As reported.* Inches.	Barometer: As reported.* Millimeters.	Barometer: Attached Thermometer. Fahrenheit.	Barometer: Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.99	761.7	59	15.0	57	13.9	94	SW	11	4.9			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.02	762.5			84	28.9	87	W	7	3.1			4			0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	29.80	756.9	76	24.4	73	22.8	95	N			1		10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	30.04	763.0	77	25.0	75	23.9	81	SW			1		0			0	0			Clear	
Alert, Yokohama, Japan	30.23†	767.8†	79	26.1	79	26.1	78	S			1		1		S			Smooth		D. clouds	
Alliance, Smyrna, Turkey	30.09	764.3	78	25.6	78	25.6	77	N&W			1-3		8		N					Showery	
Ashuelot, Che-foo, China	30.16	766.1	74	23.3	72	22.2	71	E			2		4		E					D. clouds	
Canonicus, New Orleans, La.	30.10	764.5	56	13.3	79	26.1	86	W			2		2							Fair	
Colorado, New York, N. Y.	29.88	758.9	74	23.3	72	22.2	80	WSW	4	1.8			10		SW	0.02	0.5			Foggy	
Despatch, Beikos Bay, Bosphorus	30.11	764.8	78	25.6	75	23.9	81	N			1		3		Calm			Smooth		Clear	
Essex, N. 40° 45′, W. 44° 15′	30.05	763.3	76	24.4	77	25.0	91	SSW			4		7		S&W			Smooth	S&W	D. clouds	
Franklin, Norfolk, Va.	30.02	762.5	78	25.6	76	24.4	95	SW	10	4.5			7		SW	0.33	8.4			D. clouds	
Frolic, Rio de Janeiro, Brazil	30.41	772.4	62	16.7	64	17.8	89	NNW			2		9n		Calm	Blank	Blank			Misty	
Gettysburg, Leghorn, Italy	29.89‡	759.2‡			86	30.0	92	S			1		2		Calm	0	0	Light	SW	D. clouds	
Kearsarge, Nagasaki, Japan	30.10	764.5			77	25.0	100	NNE			1					0	0	Smooth		Misty	
Lackawana, N. 43° 16′, W. 127° 53′	30.10	764.5			63	17.2	83	N&W			0-1		10					Long	W	D. clouds	
Marion, Constantinople, Turkey	29.98	761.5	78	25.6	82	27.8	67	S			1		5		W	0	0	Smooth		D. clouds	
Michigan, Erie, Pa.	29.35	745.5	65	18.3	65	18.3	78	NE			3		10		NE					Cloudy	
Monocacy, Yokohama, Japan	30.09	764.3	78	25.6	81	27.2	91	Calm			0		2			0	0			D. clouds	
New Hampshire, Port Royal, S. C.	30.20	767.1			81	27.2	83	SW	12	5.4			6		N&W	0	0			D. clouds	
Omaha, Mexillones, Bolivia	30.08	764.0	65.5	18.6	63	17.2	89	NNE	2	0.9			10		N	0	0	Smooth		Dull	
Onward, Callao, Peru	30.08†	764.0†	68	20.0	66.5	19.2	87	E			2		9					Long	W	Misty	
Ossipee, Norfolk, Va.	30.00	762.0	75	23.9	75	23.9	86	SE			2		3		Calm					D. clouds	
Palos, Shanghai, China	30.14	765.5	74	23.3	72	22.2	80	E			3		0			0	0			Clear	
Plymouth, New York, N. Y.	30.06	763.5	78	25.6	74	23.3	81	Calm			0		10		S&W					Cloudy	
Ranger, N. 22° 38′, E. 116° 07′	30.10	764.5			85	29.4	79	E			4		5		E			Moderate.	E	Clear	
Richmond, Boston, Mass.	29.85	758.2	73.5	23.1	73.5	23.1	83	SSW			1		10		NW	0	0			Overcast	
Rio Bravo, Brownsville, Texas	29.92	760.0			78	25.6	95	ENE			1		5		SE					Hazy	
Santee, Annapolis, Md.	29.95	760.7	79	26.1	75	23.9	77	SW			1		4		W	0	0			Cloudy	
St. Louis, League Island, Pa	29.81	757.2	74	23.3	74	23.3	81	SW	6	2.7			8		SW	0	0			Cloudy	
Tennessee, Yokohama, Japan	30.03	762.7	79	26.1	78	25.6	69	SSW	9	4.0			0			0	0	Smooth		Blue sky	
Trenton, Villefranche, France	30.04†	763.0†	84	28.9	82	27.8	60	SE	5	2.2			0			0	0			Blue sky	
Vandalia, Beirut, Syria	30.02	762.5	85	29.4	85	29.4	72	WNW			0-1		0							Blue sky	
Wabash, Boston, Mass.	29.80	756.9	74	23.3	75	23.9	81	SW	7	3.1			10			0	0			D. clouds	
Wyoming, Washington, D. C.	29.95†	760.7†	78	25.6	78	25.6		Calm			0		4							D. clouds	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio N. 32° 30′, E. 133° 03′					82	27.8		SSE			3		3		SE	Smooth	S	Clear	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 37° 34′, W. 178° 02′			30.27†	768.8†	73	22.8		W			5		k		W	Long	WNW	Overcast	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio N. 46° 30′, W. 33° 38′			30.21	767.3	64.5	18.1	78	SSW			3		c		SSW	Smooth		Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

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

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller Handkerchief Light Ship.	NW	7	29.72	754.9	76	24.4	86	SW	17	7.6		0	2ks		SW	Rough		Squally	Capt. James Jorgenson.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 2, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			30.01	762.3	90.0	32.2	62	N			1		2			0	0	Clear	Michel.
Algiers			30.04	762.9	85.6	29.8	68	N			1		7			0	0	Cloudy	Peter.
La Calle			29.98	761.6	81.0	27.2	81	NE			3		4			0	0	Fair	Fleury.
Tunis			30.01	762.2	95.0	35.0		E			3		2			0	0	Clear	Jacques.
Sfax			30.10	764.5	89.6	32.0		SE			3		2			0	6	Clear	Husson.
Saida			30.00	762.1	88.7	31.5		NW			4		6			0	0	Fair	Millot.
Tebessa			30.08	764.1	88.2	31.2		E			1		4			0	0	Cloudy	Bourgeois.
Geriville			30.02	762.6	79.5	26.4	41	SSE			4		4			Inap	Inap.	Fair	Lemaillot.
Laghouat			30.08	764.1	95.0	35.0	24	W			4		2			0	0	Clear	François.
Biskra			30.09	764.3	92.7	33.7	29	SE			1		5			0	0	Fair	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Agram	29.37	746.1	29.90	759.4	78.1	25.6	52	SW			2		2			0.142	3.6		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.26	743.2	30.03	762.7	61.9	16.6	71	NE			2		10			0.020	0.5		Dr. Wierzbiski.
Eperies	29.14	740.1	30.01	762.2	60.1	15.6	75	Calm			0		10n			0	0		Julius Mikolik.
Gratz	28.74	729.9	29.96	761.0	64.4	18.0	86	S			2		9			0.630	16.0		Andreas Rospini.
Hermannstadt	28.51	724.1	29.84	758.0	81.7	27.6	48	ESE			2		3			0.661	16.80		Prof. Reissenberger.
Kremsmünster	28.61	726.8	29.93	760.2	61.2	16.2	77	WNW			2		10			0.335	8.5		Prof. C. Wagner.
Lemberg	29.01	736.9	29.97	761.2	67.3	19.6	83	NW			1		5			0.008	0.2		Dr. T. Stanecki.
Pola	29.77	756.2	29.88	758.9	84.9	29.4	51	WSW			2		4ks			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin																			Karl Stancel.
Trieste	29.79	756.6	29.89	759.2	81.3	27.4	65	WSW			1		2			0	0		P. Busin.
Vienna	29.29	744.0	29.98	761.6	57.0	13.9	100	Calm			0		10			0.189	4.8	Rain & fog	I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Arlon	28.56	725.3	30.04	763.1	61.5	16.4	50	W			1		8			0.026	0.7		Royal Observatory.
Brussels	29.82	757.4	30.02	762.4	62.1	16.7	51	WSW			1	1	3	W	W	0	0		
Furnes	29.97	761.3	30.00	761.9	67.8	19.9	59	W			2		8			0	0		
Maeseyck	29.90	759.4	30.03	762.7	64.6	18.1	73	WSW			4		3			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.83	757.7	29.93	760.2	52.6	11.4		NW	10	4.5			4			0	0	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			29.94	760.5	54.0	12.2		NE	4	1.8									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.90	759.4	53.0	11.7		SW	2	0.9			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.90	759.4	55.6	13.1		NW			1		8					D. clouds	J. Dreyer.
Bradford, Yorkshire																0.16	4.1		J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.96	761.0	65.0	18.3		SW			1		7					D. clouds	H. Todd. [H.C
Cardington			29.96	761.0	64.0	17.8		W			1		8					Overcast	John McLaren.
Chatham, School M. E	29.85	758.2	29.98	761.5	60.2	15.7		SW			3		5					Blue sky	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.46	722.9	29.93	760.2	53.8	12.1		SW			4		5					D. clouds	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.89	759.2	29.92	760.0	55	12.8		N			2		3					D. clouds	J. Mac Gowan.
Dover	29.96	761.0	29.98	761.5	64	17.8		SW			3		1					¼ clouded	J. Costello.
Eccles, (near Manchester)			29.91	759.7	55.7	13.2		SW					10					Drizzling	Thomas Mackereth.
Falmouth, Observatory	29.67	753.6	29.90	759.4	58.0	14.4		S			3		10					Showery	The Staff.
Fort Napier, (Natal)	27.73	704.3	29.93	760.2	86.3	30.2		N			1		0					Blue sky	Pvt. G. Salmon, A. H C.
Free Town, (Sierra Leone)			30.03	762.7	82.0	27.8		N			0		5					D. clouds	
Galway, Queen's College			29.87	758.7	58	14.4		NE			1		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.00	762.0	30.03	762.7	80.2	26.8		W			4		5					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.70	754.4	29.91	759.7	53.8	12.1		WNW			2		4					Blue sky	D. G. Maclean.
Great Yarmouth	29.96	761.0	29.97	761.2	62	16.7		W			3		2					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.80	756.9	29.97	761.2	61.8	16.6		SW			1		3					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.76	755.9	29.97	761.2	61	16.1		SSW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.87	758.7	60	15.6		SW			6		10n			0.6	15.	Showery	M. P. Moyle.
Holyhead	29.84	757.9	29.89	759.2	56	13.3		N			3		3					D. clouds	John Tilston.
Jersey	29.73	755.1	30.03	762.7	61.0	16.1		SW			3		9			Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory			29.98	761.5	61.5	16.4		SW	10	4.5			7					Hazy	The Staff.
Kingstown	29.91	759.7	29.94	760.5	54	12.2		E			2		9					Overcast	George Mitchell.
Leicester, Museum			29.93	760.2	56.8	13.8		W			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.96	761.0	30.04	763.0	88.8	31.6		NW			1		0					Blue sky	Corp'l. P. Bravis, A.H.C.
Nairn	29.82	757.4	29.91	759.7	50	10.0		NW			1		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.02	762.5	85.5	29.7		SE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.75	755.6	29.94	760.5	61.3	16.3		SSW			3		10k		SW	0.041	1.04	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.40	746.7	29.92	760.0	57.0	13.9		SSW			3		9					Drizzling	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.94	760.5	60	15.6		SSW			2		10					Overcast	F. Lucas
Plymouth			29.93	760.2	62.0	16.7		SSW			3		8					D. clouds	John Merrifield.
Roche's Point	29.80	756.9	29.84	757.9															W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			29.90	759.4	49	9.4		NW	18	8.0			3					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.93	760.2	86.4	30.2		NE			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.68	753.9	29.92	760.0	57.3	14.1		WSW			2		8			0	0	Overcast	W. F. Cooper.
Silloth Rectory	29.87	758.7	29.90	759.4	64.2	17.9	54	Calm			0		2			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					56.5	13.6		SW			0		10					Raining	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C., (Hebr.)			29.94	760.5	50	10.0		N			2		2					Blue sky	John Smith.
Stratfield Turgiss	29.75	755.6	29.97	761.2	61.5	16.4		SW			1		8					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.89	759.2	52	11.1		NNW			4		5					D. clouds	John Trotter.
Truro, Royal Institution			29.78	756.4	60	15.6		S			5		10					Raining	W. Newcombe.
Valencia, Observatory			29.87	758.7	51.7	10.9		N	10	4.5			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					55	12.8		NW			1		0			0.30	7.6		Henry Mercer.
Cape Good Hope, Obs'y	30.14	765.5	30.18	766.6	70.5	21.4	62	S	3	1.3		4	6						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.42	747.3	48.0	8.9	88	Calm			0		7n					Showery	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.94	760.5	54.9	12.7		E			1	2ck		NW		0.01	0.3	Fine	Andrew Gibb.
Mauritius, Observatory	29.95	760.7	30.14	765.5	73.8	23.2	75	E	16.0	7.2		0	6		ENE	0.13	3.3	Fair	C. Meldrum.
Melbourne, Observatory	29.95	760.7	30.04	763.0	45.0	7.2	77	W	14	6.3			3			0.05	1.3	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.99	761.7	53	11.7		NE			4	0	0			0.1	3.		J. Youngclause.
North Unst, (Shetland Is.)			29.75	755.6	49	9.4		N			6	10	10						Robert Burnet.

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

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia, N. 42° 38′, W. 66° 25′			29.76	755.9	67	19.4		SW			3		10			2	SSW	Foggy	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 46° 30′, W. 51° 0′			30.04	763.0	61	16.1		SW			3		7			3		D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 49° 55′, W. 31° 25′			30.14	765.5	61	16.1		SSW			4		10			4	W	Overcast	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer.
San José	26.27	667.2			67.1	19.5	90	E			2		7ks			0.1	3.	Storm	Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.80	757.0	29.85	758.2	55.4	13.0	70	W			4		7					Raining	
Fanöe	29.85	758.3	29.87	758.8	55.0	12.8	83	W			4		6						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.85	758.3	29.89	759.2	49.5	9.7	73	NW			4		3						
Vestervig	29.64	752.8	29.81	757.1	56.1	13.4	75	W			6		4						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.50	749.2	30.05	763.2	66.2	19	62	S			2		8		W	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.92	760.0	30.00	762.0	82.0	27.8	39	N			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.48	748.8	30.03	762.8	67.5	19.7	36	W			2		5		WSW	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.76	755 8	30.04	762.9	66.7	19.3	50	S			2		8		WSW	0	0	Very cloudy	Normal School.
Besançon	29.29	744.0	30.19	766.7	65.8	18.8	76	ESE			2		5		NW	0.480	12.2	Cloudy	Normal School.
Bourg-en-Bresse	29.23	742.4	30.16	766.1	69.8	21	57	N			2		5km		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.58	751.4	30.12	765.1	66.2	19	72	NW			3		5		W	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.69	754.2	29.91	759.8	60.6	15.9	64	SW			3		10		SW	0.197	5.00		The Staff.
Carcassonne, Normal School	29.60	751.8	30.00	761.9	79.3	26.3	63	E			1		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.74	755.4	30.06	763.4	65.1	18.4	77	W			1		5			0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.67	728.1	29.99	761.7	67.1	19.5	63	N			1		8		SW	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.19	741.8	30.05	763.3	62.6	17	52	W			2		2		W	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.90	734.1	30.04	763.1	83.7	28.7	27	W			1		2		SW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.84	757.8	30.05	763.2	64.4	18.0	67	SW			2		8		SW	0.055	1.4	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.72	754.8	30.02	762.4	64.9	18.3	49	W			2		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.14	740.2	30.04	762.9	66.4	19.1	62	SW			1		1		SW	0.043	1.1	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	30.00	762.1	30.10	764.6	64.8	18.2	80	S			2		2		SE	0.157	4.0	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.34	745.2	30.02	762.5	61.0	16.1	84	Calm			0		5			0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.02	737.0	30.04	763.1	63.1	17.3	56	NW			1		8		SW	0	0	Very cloudy	Normal School.
Nismes, Normal School	29.85	758.2	30.04	763.1	86.9	30.5	41	N			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.78	756.3	30.02	762.4	68.4	20.2	33	SSW			1		8k		SW	0	0	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.03	762.8	30.07	763.6	72.0	22.2	50	NNE			2		2		N	0.12	3.	¼ covered	Lt. Decante, Director.
Rouen, Normal School	29.94	760.4	30.02	762.6	65.7	18.7	46	SW			2		5		W	0.087	2.2	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.92	737.2	30.10	764.6	72.0	22.2	70	E			1		10		W	0	0	Covered	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.85	758.1	29.87	758.8	80.6	27.										0.51	18.		L'Abbé Marchési.
Marseilles, Observatory			29.95	760.8	79.7	26.5	55	WSW			2		4			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.97	634.8	30.29	769.3	68.4	20.2	37	S	18.6	8.33			8		SSW	0.031	0.8		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.74	755.3	30.01	762.3	71.4	21.9	30	SSW			1		7		W	0	0		Marié Davy, Director.
Perpignan			29.95	760.8	81.3	27.4	50	E	7.4	3.33			7		NW	0.008	0.2		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.41	543.8			45.0	7.2		SW			3		5					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.04	575.0			52.9	11.6		SW			4–6		5			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29 85	758.3	30.02	762.5	67.5	19.7	34	NW			1		5			0	0		E. Renou.
Toulouse, Observatory	29.35	745.5	30.08	763.9	71.6	22.0	58	NW			2		6			Inap.	Ina p.		The Staff.
Tours								W			2		5		W	0.012	0.3		C. Marquet.
Versailles, (near Paris)			30.03	762.8	67.3	19.6	41	SE			1		8			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.01	762.3	30.04	762.9	71.6	22.0	89	E	4.0	1.8			1k			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. T. Hoh.
Berlin	29.85	758.2	30.02	762.5	62.2	16.8	45	SW			1		4			0	0		Prof. Arndt.
Breslau	29.52	749.9	30.06	763.4	56.5	13.6	63	ENE			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.60	751.9	30.02	762.5	65.7	18.7	59	SW			2		10			0.004	0.1		Albert Senz.
Cassel	29.47	748.6	30.10	764.6	51.1	10.6	48	SE			2		10	SW		0	0		Dr. H. Möhl.
Crefeld	29.84	758.0	30.00	762.1	65.3	18.5	43	W			3		7k			0	0		Director Lose.
Emden	29.92	760.0	29.96	760.9	61.2	16.2	61	W			3		4			0	0		Prof. Prestel.
Frankfort on the Main	29.71	754.6	30.07	763.6	69.4	20.8	12	SW			2		5			0	0		Physical Society.
Friedrichshafen	28.65	727.6	30.07	763.7	60.8	16.0	72	NNW			3		10	WNW		Blank	Blank		M. Wilhelm.
Hamburg	29.91	759.8	29.98	761.6	59.4	15.2	66	WSW			5		8k	WSW		0.012	0.3		Captain F. Hegemann.
Kiel	29.92	759.9	29.93	760.3	58.5	14.7	64	SW			3		7			0.140	3.55		Prof. G. Karsten.
Königsberg, (Prussia)	29.83	757.7	29.91	759.7	55.8	13.2	73	W			2								Prof. E. Luther.
Köslin			29.97	761.3	56.1	13.4		SW			4		4			0.083	2.1		H. Müller.
Leipsic, Observatory	29.65	753.1	30.07	763.7	60.8	16 0	59	NW			2		6			0	0		Prof. Bruhns.
Memel, Naval School	29.83	757.6	29.87	758.8	57.7	14.3	57	W			8		3k					Squally	Reinbrecht von Skałweit.
Neufahrwasser	29.94	760.5	29.96	760.9	57.2	14.0	58	NW			4		10			0	0		A. Lothes.
Posen	29.77	756.1	30.05	763.3	65.8	18.8	44	W			5		8			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.52	749.8	30.06	763.5	66.2	19.0	54	SSW			3		9	W		0.010	0.25		Dr. Schur.
Stuttgart	29.10	739.1	30.03	762.8	64.9	18.3	48	W			1		5	W		Blank	Blank		Prof. Schoder.
Treves, (Trier)	28.54	725.0	30.03	762.8	58.6	14.8	51	WSW			1		10	W		0.020	0.5		Prof. Flesch.
Weissenburg, (Bavaria)	29.98	761.5	30.02	762.5	57.9	14.4	67	WSW			6		4			0	0		Dr. Von Bebber.
Wustrow, Naval School																			E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.64	752.8	29.98	761.6	88.3	31.3		SW					Calm					Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.49	748.9	29.54	750.2	84.2	29.0	79	WSW	33.0?	14.8?			9			0	0		D. clouds
Deesa																			
Bombay	29.66	753.3	29.70	754.3	82.4	28.0	85	W	19.0	8.5			9		WSW	0.05	1.3		Misty
Poona	27.69	703.3	29.69	754.0	76.7	24.8	78	W					10		W	0.04	1.0		Raining
Lahore	28.92	734.7	29.67	753.6	75.3	24.1	88	E	3.9	1.7			10		E	1.35	34.3		Cloudy
Belgaum	27.25	692.1	29.80	756.8	72.7	22.6	86	W	14.0	6.3			9		W	0	0		D. clouds
Bangalore																			
Roorkee	28.76	730.6	29.64	752.8	90.2	32.3	53	SE	5.3	2.4			8			0.01	0.3		
Agra	29.04	737.6	29.59	751.6	89.2	31.7	61	SE					4		SE	0	0		
Trichinopoly																			
Nagpur	28.62	726.9	29.65	753.0	85.8	29.9	72	Calm	2.8	1.2			8			0.12	3.0		D. clouds
Madras																			
Lucknow	29.27	743.5	29.63	752.7	94.6	34.8	43	S	6.0	2.7			9			0	0		D. clouds
Allahabad	29.33	744.9	29.63	752.6	89.6	32.0	77	ENE	4.1	1.8			0			0	0		Blue sky
Patna	29.52	749.7	29.69	754.2	90.1	32.3	63	E	1.3	0.6			4	E	E	0	0		D. clouds
Hazaribagh	27.71	703.9	29.71	754.6	80.8	27.1	76	ESE	10.8	4.8			1			0	0		
Cuttack	29.59	751.6	29.67	753.6	84.8	29.3	76	E	2.4	1.1			4			0	0		D. clouds
Calcutta (Alipore)	29.71	754.6	29.73	755.2	81.7	27.6	87	WNW	3.0	1.3			10		SE				Showery
Goalpara	29.31	744.5	29.69	754.2	87.8	31.0	76	Calm	0.9	0.4			0			0	0		Blue sky
Chittagong	29.63	752.6	29.73	755.2	86.9	30.5	75	NW	1.2	0.5						0	0		Gloomy
Sibsagar	29.38	746.4	29.71	754.7	88.9	31.6	77	ENE	1.7	0.8			10	W	W	0.03	0.8		D. clouds
Rangoon																			
Jubbulpore	28.31	719.1	29.66	753.5	81.9	27.7	81	SE	3.5	1.6			8	NW	SW	0	0		D. clouds

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.25	565.1	29.87	758.7	54.1	12.3	63	WNW			6		5	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.21	564.3	29.84	757.8	54.0	12.2		SW			1		7	ENE		0.555	14.1		Signora Ernesta Manfredi.
Udine	29.45	748.1	29.85	758.2	77.2	25.1	60	SW	1.8	0.8			6			0.457	11.6		Prof. Giovanni Clodig.
Padua	29.74	755.3	29.84	758.0	79.0	26.1	59	N	2.5	1.1			7	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.64	752.9	29.83	757.6	81.7	27.6	54	SE	1.8	0.8			5	W		0	0		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.55	725.1	29.82	757.4	77.7	25.4	61	NE			2		4			0	0		Prof. Trionfini Carlo.
Domodossola	28.79	731.3	29.82	757.5	77.0	25.0	59	S			4		6			0	0		Prof. Giuseppe Calza.
Milan	29.35	745.5	29.84	758.0	82.0	27.8	60	ENE			2		3	ENE		0	0		Ab. Gio. Capelli.
Pavia	29.51	749.6	29.84	758.0	80.1	26.7	61	NE			1		6	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.97	735.8	29.84	757.9	78.1	25.6	61	NNW	3.1	1.4			5			0	0		Prof. P. F. Denza.
Mondovi	27.97	710.5	29.80	757.0	82.6	28.1	49	NNW			4		8	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.70	754.4	29.917	759.87	81.1	27.3	54	SW			6		7	SW		0	0		Prof. L. Vassallo.
Genoa	29.73	755.1	29.89	759.2	81.9	27.7	61	SE	12.5	5.6			6	SE		0	0		Prof. G. M. Garibaldi.
Piacenza	29.61	752.1	29.85	758.2	81.1	27.3	51	N			2		5			0	0		Dott. G Manzi.
Parma	29.54	750.4	29.85	758.1	86.2	30.1	30	SW			6		5			0	0		Prof. P. Pigorini.
Florence	29.71	754.7	29.96	760.9	84.2	29.0	41	SW			4		8	SW		0	0		Cav. F Meucci.
Leghorn	29.87	758.8	29.96	760.9	82.4	28.0	57	SW	4.3	1.9			5			0	0		Prof. P. Monte.
Siena	28.77	730.7	29.93	760.3	82.9	28.3	42	W	0.7	0.3			8	W		0	0		Prof. L. Toscani.
Urbino	28.44	722.4	29.93	760.3	77.5	25.3	56	SW			2		10			0	0		Prof. P. Serpieri.
Pesaro	29.85	758.2	29.90	759.4	82.6	28.1	66	SW	13.0	5.8			10	SW		0	0		Prof. Luigi Guidi.
Ancona	29.78	756.3	29.88	758.9	85.3	29.6	56	SW			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.85	758.3	29.96	761.0	88.9	31.6	41	S			2		2	SW		0	0		Avv. P. Ponticelli.
Rome	29.82	757.3	29.98	761.6	87.1	30.6	57	SW	11.2	5.0			10			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.85	758.2	30.04	763.1	87.8	31.0	63	SW			4		2	S		0	0		Prof. L. Palmieri.
Lecce	29.75	755.6	29.90	761.7	92.3	33.5	22	SSE	11.9	5.3			1			0	0		Prof. C. DeGiorgi.
Cosenza	29.18	741.1	30.02	762.4	91.0	32.8	30	NNW	6.3	2.8			0			0	0		Prof. F. D. Conti.
Cagliari	29.73	755.1	29.91	759.7	84.9	29.4	62	S			4		4	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.92	759.9	29.97	761.1	86.0	30.0	75	SE			2		3			0	0		Prof. F. Cafiero.
Palermo	29.74	755.3	29.98	761.4	86.0	30.0	49	E	3.1	1.4			0			0	0		Prof. G. Cacciatore.
Caltanissetta	28.11	714.0	29.95	760.7	87.3	30.7	29	SW			2		0			0	0		Prof. A. Pagani.
Syracuse	29.87	758.8	29.95	760.7	93.2	34.0	51	SE			2		1	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.51	749.6	30.07	763.7	84.9	29.4	63	NW	1.8	0.8			4	SW		0	0		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	30.00	762.0	30.08	764.0	73	22.8	90	Calm	0	0						0	0	Clear.	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.16	588.2	30.17	766.2	53.6	12.0	81	W	1.6	0.74		1c	1s			0	0	Clear.	Mariano Bárcena Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	30.03	762.7	30.03	762.7	62.6	17.0		W			2					0	0		
Groningen	29.92	760.0	29.98	761.4				W			2					0	0		
Helder	29.97	761.1	29.97	761.1	61.2	16.2		SW			2					0	0		
Utrecht	29.97	761.1	30.01	762.3	63.7	17.6	48	SW			2		5			0.004	0.1	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.60	751.8	29.65	753.2	49.6	9.8	79	WSW	14.1	6.3			10			0.929	23.6	Raining	
Brönø	29.44	747.8	29.48	748.8	55.4	13.0	66	NNE	9	4			3			0	0		
Christiania	29.35	745.6	29.50	749.2	58.8	14.9	64	SW	4	2			6			0	0		
Tromsö	29.47	748.6	29.52	749.7	50.4	10.2	58	Calm	0	0			5			0.236	6.0		

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

PORTUGUESE SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.03	762.8	30.22	767.6	69.8	21.0	82	E	9.8	4.4			5			0	0		Dr. J. A. Sampaio
Campo Major	29.04	737.6	30.02	762.6	79.7	26.5	41	SE	6.3	2.8			8	SSW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.04	763.1	30.13	765.3	76.1	24.5	83	SSE	10.5	4.7			5			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.71	754.7	30.07	763.6	74.3	23.5	54	SW	13.7	6.1			2			0.004	0.1		The Staff.
Ponta Delgada, (Azores)	30.11	764.7	30.18	766.5	74.8	23.8	74	NE	3.1	1.4			6			0.035	0.9		

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

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

RUSSIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Warsaw	29.60	751.7	30.01	762.3	61.2	16.2	56	WSW	4	2			10						Astronomical Obs.
Wilna	29.48	748.9	29.90	759.4	60.1	15.6	58	WSW	9	4			7						Astronomical Obs.
Dorpat	29.37	746.1	29.61	752.2	54.7	12.6	78	WSW	16	7			10					Raining	Physical Cabinet.
St. Petersburg	29.48	748.9	29.50	749.3	56.3	13.5	74	WNW	13	6			4						Central Physical Obs
Kuoplo	28.96	735.6	29.27	743.5	55.0	12.8	91	E	7	3			10					Raining	Ch. Forsten.
Kieff	29.34	745.3	29.96	760.9	67.8	19.9	54	NW	4	2			4						Physical Cabinet.
Nikolaiev	29.89	759.3	29.97	761.1	86.4	30.2	42	Calm	0	0			7						Kurdakof.
Kertch	29.91	759.8	29.93	760.3	83.1	28.4	48	N	4	2			2						Lagorio.
Moscow	29.27	743.4	29.81	757.1	58.8	14.9	66	S	13	6			4						Meteorological Obs.
Lugan	29.60	751.7	29.79	756.6	88.9	31.6	19	SW	4	2			1						Meteorological Obs.
Archangel	29.37	745.9	29.39	746.4	49.8	9.9	89	ENE	18	8			10					Raining	Ogorodnikof.
Tiflis	28.57	725.7	29.90	759.4	89.4	31.9	36	SE	4	2			3						Physical Observatory.
Astrakhan	30.11	764.9	30.03	762.8	76.3	24.6	52	SSE	2	1			4						Sebastianof.
Kasan	29.34	745.2	29.60	751.8	60.4	15.8	82	SW	13	6			10						Physical Cabinet.
Orenburg	29.64	752.8	30.01	762.2	56.8	13.8	85												Tschernischef.
Ekaterinburg	28.91	734.2	29.84	758.0	54.1	12.3	62	SW	9	4			10						Meteorological Obs.
Nukuss	29.80	756.8	30.02	762.5	80.2	26.8	45	NE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.42	721.8	30.05	763.3	77.4	25.2	59	NW	2	1			0						Michelson.
Barnaul	29.26	743.1	29.76	756.0	59.9	15.5	84	NW	2	1			8						Meteorological Obs.
Yeniseisk	29.45	747.9	29.59	751.6	62.4	16.9	80	SW	2	1			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.83	757.7	29.97	761.3	75.2	24.0	67	Calm	0	0			0						Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					60.3	15.7	84	E	18	8			10						

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

SPANISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.86	707.7			70.3	21.3	64	S	20.9	9.34		0	10			0.008	0.2	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.96	761.0	30.04	763.1	80.8	27.1	87	Calm	0	0		0	1k			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y	29.97	761.2	30.07	763.6	79.2	26.2	70	WNW	10.6	4.7		0	10		W	0.060	1.5		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.91	759.6	81.0	27.2	88	SE				6n	3n			1.063	27.00	Cloudy	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.44	747.7	29.48	748.7	55.4	13.0	64	NE			4		8			0.12	3.		
Umea	29.40	746.8	29.45	748.1	54.9	12.7	67	NNW			2		9			0.134	3.4		
Hernosand	29.37	746.1	29.43	747.4	54.3	12.4	98	NW			2		8			0	0		
Stockholm	29.32	744.8	29.54	750.3	58.6	14.8	56	WSW			4		5			0	0		
Wisby	29.58	751.2	29.63	752.7	57.2	14.0	65	WNW			6		5			0.335	8.5		
Sub-Series.																			
Upsala	29.45	748.0	29.52	749.9	57.9	14.4	64	SW	9.2	4.1			6		W	0.441	11.20		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.61	726.6	29.98	761.5	72.7	22.6	48	Var.			2		7			0	0	Cloudy	The Observatory.
Zurich	28.47	723.1	30.10	764.6	55.0	12.8	89	W			1		10			0.217	5.5	Covered	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —0.8 mm; Thermometer, +2.6 cent.; Relative Humidity, —11 per cent.

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

TURKISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.07	761.8	80.6	27.0	53	N	4	2.0			2		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.05	763.2	86.4	30.2		NE			1		0						B. Stéfanidès.
Valona			30.14	765.5	91.0	32.8		SW			2		0			0	0	Clear	A. Bertrand.
Varna			29.96	761.0	86.0	30.0		E			2		0						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.81	757.2	29.93	760.2	86.5	30.3	60	N			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			29.77	756.1	64	17.8		SW	1	0.4		0	2s		SW	0	0	Fair	W. R. Bigg.
*Chatham, N. B.			29.69	754.1	61	16.1	94	SW	2	0.9			10s		SW	0.13	3.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.72	754.9	67	19.4	91	S	10	4.5			10n		Calm	0.580	14.73	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.54	750.3	29.73	755.1	57.0	13.9	76	NW			2	0	0			0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.52	749.8			60	15.6	82	W			2					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	29.93	760.2	29.98	761.5	55.2	12.9	100	Calm				0	0			0	0	Hazy	W. H. Bevis.
*Father Point, Quebec			29.72	754.9	53	11.7	80	SW	13	5.8		0	3s		Calm	Inap.	Inap.	Clear	J. McWilliams.
Fredericton, N. B.	29.68	753.9	29.74	755.4	58.7	14.8	79	NW	6	2.7			10s			0.06	1.5	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			30.24	768.1	38	3.3	95	N	2	0.9		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.04	737.6	29.81	757.2	57.5	14.2	83	N			5		10n			0.306	7.77	Wet	H. J. Strang, M. A
Granton, Ontario	28.74	730.0	29.83	757.7	52	11.1	93	SW			1	2k	0	E		0.09	2.3	Clear	James Grant.
*Halifax, N. S.	29.60	751.8	29.73	755.1	66	18.9	96	SW	6	2.7			10n			0.291	7.40	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.45	748.0	29.81	757.2	58.7	14.8	75	W			3	8cs	0	W		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.92	760.0	29.95	760.7	63	17.2	77	SW			3		10n			0.01	0.3	Overcast	E. Weedon.
*Kingston, Ontario	29.45	748.0	29.81	757.2	61	16.1	71	SW	6	2.7		5c	0	Calm		0	0	Fair	S. Woods, M. A.
*Montreal, Quebec	29.54	750.3	29.73	755.1	57	13.9	78	S	8	3.6		0	8ks			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.09	738.9	29.78	756.4	49	9.4	93	N	8	3.6		2ck	5ks	W	W	0.25	6.3	Fair	Rev. R. Mosley
Peterboro, Ontario	29.04	737.6	29.77	756.1	56.7	13.7	63	SW			1	10k	0			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.16	740.7	29.85	758.2	53	11.7	86	W	7	3.1		8ck	0	W		0	0	Fair	H. Morgan.
Port Hastings, N. S.																			Peter Grant
Port Stanley, Ontario	29.22	742.2	29.86	758.4	54	12.2	81	W	8	3.6		10k	0	W		0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.45	748.0	29.77	756.1	57	13.9	75	Calm	0	0		0	0			0	0	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.29	744.0	29.75	755.6	47	8.3	96	SE	2	0.9			8s		W	0.10	2.5	Fair	W. H. McIntyre.
St. John, N. B.	29.59	751.6	29.75	755.6	58	14.4	94	Calm	0	0			Fog			0.04	1.0		G. Murdock, C. E.
*Saugeen, Ontario	29.07	738.4	29.76	755.9	55	12.8	83	NW	8	3.6		2k	5ks	E	SE	0.54	13.7	Cloudy	K. Stewart.
Stayner, Ontario																			R. J. Cole.
Stratford, Ontario	28.55	725.2	29.81	757.2	51.4	10.8	96	SW	8	3.6		1c	6ks	NW		0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.74	755.4	29.77	756.1	68	20.0	95	SW	4	1.8			10s		SW	0.77	19.6	Cloudy	T. C. Hill.
*Toronto, Ontario	29.44	747.8	29.81	757.2	54	12.2	80	W	5	2.2			10ks		W	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					63.0	17.2	83	S				10k	10s			0	0	Cloudy	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.46	748.3	29.68	753.9	58	14.4	75	Calm	0	0		5c	0	W		0.07	1.8	Fair	
Alpena, Michigan	29.19	741.4	29.84	757.9	48	8.9	77	W	10	4.5		0	1ks		W	0.13	3.3	Clear	
Atlantic City, New Jersey	29.77	756.1	29.79	756.7	65	18.3	68	N	11	4.9		10cs	0	W		Inap.	Inap.	Cloudy	
Augusta, Georgia	29.67	753.6	29.84	757.9	78	25.6	73	NW	3	1.3		1c	0	Calm		0	0	Clear	
Baltimore, Maryland	29.78	756.4	29.82	757.4	67	19.4	54	NW	8	3.6		5k	2s	NW	NW	0	0	Fair	
Barnegat, New Jersey	29.76	755.9	29.78	756.4	64	17.8	67	NW	14	6.3		5cs	5s	SW	W	0	0	Cloudy	
Bismarck, Dakota	28.42	721.9	30.11	764.8	51	10.6	46	Calm	0	0		0	0			0	0	Clear	
Boise City, Idaho	27.23	691.6	29.76	755.9	61	16.1	45	SE	4	1.8		2k	2s	Calm	S	0	0	Fair	
Boston, Massachusetts	29.58	751.3	29.73	755.1	64	17.8	73	NE	6	2.7		5cs	4ks	SW	NE	0.02	0.5	Cloudy	
Brackettville, Texas	28.85	732.8	29.84	757.9	76	24.4	76	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	29.20	741.7	30.23	767.8	40	4.4	95	NE	7	3.1		0	0			0	0	Clear	
Brownsville, Texas	29.83	757.7	30.00	762.0	79	26.1	86	Calm	0	0		0	0			Inap.	Inap.	Clear	
Buffalo, New York	29.11	739.4	29.79	756.7	58	14.4	64	W	7	3.1		5k	0	W		0	0	Fair	
Burlington, Vermont	29.51	749.5	29.76	755.9	59	15.0	76	S	7	3.1		0	0			Inap.	Inap.	Clear.	
Cairo, Illinois	29.67	753.6	30.05	763.3	68	20.0	84	NW	3	1.3		5c	0	Calm		0.21	5.3	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.74	679.2	30.24	768.1	69	20.6	35	Calm				8c	Sm'e	Calm		0	0	Fair	
Campo, California	27.34	694.4	29.91	759.7	61	16.1	57	Calm	0	0		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.71	754.6	29.72	754.9	75	23.9	85	SW	9	4.0			10s	SW		0.85	21.6	Threatening	
Cape Henry, Virginia	29.72	754.9	29.74	755.4	75	23.9	85	N	22	9.8			10s		NE	0.43	10.9	Cloudy	
Cape Lookout, N. Carolina	29.76	755.9	29.77	756.1	79	26.1	78	SW	8	3.6		2ck	5ks	W	SW	1.46	37.1	Cloudy	
Cape May, New Jersey	29.74	755.4	29.77	756.1	66	18.9	100	N	18	8.0			10s		NE	0.05	1.3	Cloudy	
Charleston, South Carolina	29.78	756.4	29.84	757.9	78	25.6	77	W	10	4.5		2cs	0	Calm		0	0	Fair	
Cheyenne, Wyoming	24.23	615.4	30.17	766.3	51	10.6	93	SE	12	5.4			10n		Calm	0.34	8.6	Light rain	
Chicago, Illinois	29.19	744.0	29.97	761.2	56	13.3	81	N	6	2.7		1c	0	W		0	0	Clear.	
Cincinnati, Ohio	29.28	743.7	29.91	759.7	58	14.4	76	W	1	0.4		0	Haze		Calm	0.01	0.3	Clear	
Cleveland, Ohio	29.18	741.2	29.89	759.2	58	14.4	69	SW	8	3.6			10s		W	0	0	Cloudy	
Concho, Texas	28.10	713.7	29.72	754.9	71	21.7	67	W	2	0.9		1c		W		0	0	Clear.	
Corsicana, Texas	29.49	749.0	29.94	760.5	78	25.6	77	NE	3	1.3		2cs	8s	Calm	NE	0	0	Cloudy	
Davenport, Iowa	29.45	748.0	30.09	764.3	53	11.7	79	NW	14	6.3		0	0			0	0	Clear	
Denison, Texas	29.28	743.7	30.05	763.3	73	22.8	80	NW	6	2.7			10s		NW	0.02	0.5	Threatening	
Denver, Colorado	24.95	633.7	30.28	769.1	56	13.3	93	NW	8	3.6			10n		NW	0.17	4.3	Light rain	
Detroit, Michigan	29.19	741.4	29.85	758.2	54	12.2	79	W	6	2.7		5cs	0	W		0	0	Fair	
Dodge City, Kansas	27.62	701.5	29.88	758.9	60	15.6	76	E	4	1.8			10s		E	0.01	0.3	Cloudy	
Dubuque, Iowa	29.38	746.2	30.08	764.0	51	10.6	78	N	1	0.4		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.40	746.7	30.07	763.8	53	11.7	66	NW	3	1.3		0	0			0	0	Clear	
Eagle Pass, Texas	29.17	740.9	29.88	758.9	78	25.6	77	SE	2	0.9		0	0			0	0	Clear	
Eastport, Maine	29.65	753.1	29.71	754.6	59	15.0	76	NW	2	0.9		5k	5s	SW	NW	0.07	1.8	Cloudy	
Erie, Pennsylvania	29.10	739.1	29.79	756.7	61	16.1	61	W	8	3.6		5k	0	NW		0.42	10.7	Fair	
Escanaba, Michigan	29.29	744.0	29.93	760.2	48	8.9	78	NW	8	3.6		5k	0	NW		0.06	1.5	Fair	
Florence, Arizona	28.29	718.6	29.89	759.2	85	29.4	24	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.15	613.4	30.15	765.8	59	15.0	53	N	4	1.8		0	0			0	0	Clear	
Fort Craig, New Mexico	25.66	651.8			68	20.0	60	NE	8	3.6		0	0			0	0	Clear.	
Fort Gibson, Indian Ter.	29.55	750.6	30.07	763.8	67	19.4	84	N	2	0.9			10s		Calm	0	0	Cloudy	
Fort Griffin, Texas	28.72	729.5	29.93	760.2	76	24.4	81	N	6	2.7			8ks		W	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.86	733.0	29.94	760.5	68	20.0	84	NE	23	10.3			10s		NE	0.01	0.3	Threatening	
Fort Sully, Dakota	28.52	724.4	30.20	767.1	48	8.9	72	Calm	0	0		2c	0	Calm		0	0	Fair	
Galveston, Texas	29.96	761.0	30.00	762.0	82	27.8	83	SW	2	0.9		1k	0	Calm		0	0	Clear	
Grand Haven, Michigan	29.27	743.4	29.90	759.4	59	15.0	59	NW	22	9.8		0	10ks		NW	0	0	Cloudy	
Indianapolis, Indiana	29.20	741.7	29.96	761.0	58	14.4	81	Calm	0	0		5k	2s	NW	NW	0	0	Fair	
Indianola, Texas	29.97	761.2	30.00	762.0	82	27.8	83	SW	1	0.4		0	Haze		Calm	0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.91	759.7	29.93	760.2	75	23.9	81	W	8	3.6		2k	0	W		2.00	50.8	Fair	
Keokuk, Iowa	29.46	748.3	30.07	763.8	60	15.6	66	NW	2	0.9		4c	0	Calm		0	0	Fair	
Key West, Florida	29.98	761.5	30.02	762.5	83.0	28.3	72	N	2	0.9		0	2ks		Calm	0.01	0.3	Hazy	
Kittyhawk, North Carolina	29.74	755.4	29.76	755.9	71	21.7	100	N	2	0.9			10n		N	1.12	28.4	Light rain	
Knoxville, Tennessee	28.95	735.3	29.92	760.0	66	18.9	94	NW	4	1.8			10ks		SW	Inap.	Inap.	Cloudy	
La Crosse, Wisconsin	29.35	745.5	30.09	764.3	54	12.2	79	Calm	0	0		0	0			0	0	Clear	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	70	21.1	56	Calm	0	0		0	2s		Calm	0	0	Fair	
Laredo, Texas					81	27.2	78	SE	2	0.9		0	0			0	0	Clear	
Leavenworth, Kansas	29.30	744.2	30.14	765.5	57	13.9	81	N	1	0.4			10s		Calm	0.03	0.8	Cloudy	
Los Angeles, California	29.55	750.6	29.88	758.9	65	18.3	64	N	2	0.9		5c	2s	N	N	0	0	Cloudy	
Louisville, Kentucky	29.41	747.0	29.96	761.0	60	15.6	76	NW	3	1.3		0	Fog		Calm	0	0	Fair	
Lynchburg, Virginia	29.16	740.7	29.80	756.9	76	24.4	69	NE	4	1.8			10ks		NE	0	0	Cloudy	
Maricopa Wells, Arizona					78	25.6	34	N				5ck	2s	E	E	0	0	Fair	
Marquette, Michigan	29.23	742.4	29.93	760.2	48	8.9	85	NW	12	5.4			10n		Calm	0.36	9.1	Light rain	
Mason, Texas	28.37	720.6	29.92	760.0	73	22.8	71	Calm	0	0			5ks			0	0	Fair	
Memphis, Tennessee	29.71	754.6	30.02	762.5	66	18.9	94	N	4	1.8		0	5s		N	Inap.	Inap.	Fair	
Milwaukee, Wisconsin	29.36	745.7	30.04	763.0	53	11.7	73	NW	9	4.0		1c	Sm'e	Calm	NW	0	0	Clear.	
Mobile, Alabama	29.96	761.0	30.01	762.2	74	23.3	90	N	5	2.2		0	8s		N	1.06	26.9	Fair	
Montgomery, Alabama	29.76	755.9	29.99	761.7	73.5	23.1	83	W	6	2.7		10cs	0	W		0.13	3.3	Cloudy	
Morgantown, West Virginia	28.86	733.0	29.88	758.9	61	16.1	76	Calm	0	0		0	5s		NW	0.07	1.8	Fair	
Mt. Washington, N. H.	23.63	600.2	29.99	761.7	36	2.2	70	NW	12	5.4		8c	Haze	W	Calm	0.49	12.4	Fair	
Nashville, Tennessee	29.59	749.3	30.02	762.5	65	18.3	68	N	4	1.8		2cs	0	Calm		0.04	1.0	Clear	
New Haven, Connecticut	29.65	753.1	29.77	756.1	62	16.7	71	N	8	3.6			10s		N	0	0	Cloudy	
New London, Connecticut	29.71	754.6	29.75	755.6	66	18.9	78	Calm	0	0		0	10s		W	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	29.94	760.5	29.99	761.7	80	26.7	78	W	6	2.7		4ck	0	NW		0.47	11.9	Fair	
Newport, Rhode Island	29.70	754.4	29.75	755.6	65	18.3	78	NE	4	1.8			10ks		SW	0.01	0.3	Cloudy	
New York, New York	29.62	752.3	29.79	756.7	62	16.7	66	NW	8	3.6		5ck;k	2ks	SW	S	0.02	0.5	Fair	
Norfolk, Virginia	29.71	754.6	29.77	756.1	72	22.2	80	N	1	0.4		5ck	2s	N	Calm	0.28	7.1	Fair	
North Platte, Nebraska	27.29	693.2	29.86	758.4	54	12.2	54	NE	3	1.3			10s		Calm	0	0	Cloudy	
Olympia, Washington Ter.	29.92	760.0	29.96	761.0	54	12.2	93	S	1	0.4		0	1ks		Calm	0	0	Clear.	
Omaha, Nebraska	29.07	738.4	30.16	766.1	52	11.1	79	Calm	0	0		8c	0	NW		Inap.	Inap.	Fair	
Oswego, New York	29.48	748.8	29.79	756.7	60	15.6	70	S	6	2.7		5k	0	NW		0.06	1.5	Fair	
Pembina, Dakota	29.40	746.7	30.25	768.3	36	2.2	90	NW	3	1.3		0	0			0	0	Clear.	
Philadelphia, Pennsylvania	29.76	755.9	29.82	757.4	63	17.2	57	N	13	5.8			10s	NW		0	0	Cloudy	
Phœnix, Arizona					75	23.9	29	Calm				5ck	0	NE		0	0	Fair	
Pike's Peak, Colorado	18.01	457.4	30.22	767.6	33	0.6	100	SW	20	8.9			Fog			0.19	4.8	Foggy	
Pioche, Nevada	24.14	613.1	29.91	759.7	56	13.3	57	NW	7	3.1		0	2s		Calm	Inap.	Inap.	Fair	
Pittsburg, Pennsylvania	29.06	738.1	29.85	758.2	56	13.3	87	NW	4	1.8		1c	0	NW		0	0	Clear.	
Port Huron, Michigan	29.18	741.2	29.83	757.7	52	11.1	79	W	6	2.7		5c	0	W		Inap.	Inap.	Fair	
Portland, Maine	29.70	754.4	29.75	755.6	61	16.1	66	N	9	4.0		10k	Haze	W		0.01	0.3	Cloudy	
Portland, Oregon	29.95	760.7	30.04	763.0	60	15.6	94	S	1	0.4		0	0			0	0	Clear	
Prescott, Arizona					61	16.1	36	SW				2ck	0	S		0	0	Fair	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	79	26.1	69	W	8	3.6		0	5ks		Calm	0	0	Fair	
Red Bluff, California	29.61	752.1	29.96	761.0	65	18.3	35	NW	3	1.3		0	0			0	0	Clear	
Rochester, New York	29.18	741.2	29.77	756.1	55	12.8	74	SW	6	2.7		2k	0	W		0.02	0.5	Fair	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.48	748.8	30.05	763.3	56.5	13.6	90	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.88	758.9	29.96	761.0	57	13.9	69	S	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.51	749.5	30.08	764.0	60	15.6	71	NW	8	3.6		0	0			0.02	0.5	Clear	
St. Marks, Florida	29.95	760.7	29.96	761.0	73	22.8	95	Calm	0	0		5c	2s	Calm	NW	0.09	2.3	Fair	
St. Paul, Minnesota	29.26	743.2	30.09	764.3	48	8.9	85	Calm	0	0		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.25	641.3	30.08	764.0	57	13.9	52	W	1	0.4		5k	0	SW		0.07	1.8	Fair	
San Antonio, Texas	29.30	744.2	29.86	758.4	77	25.0	81	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.85	758.2	29.92	760.0	69	20.6	75	NW	3	1.3		5ck	0	W		Inap.	Inap.	Fair	
Sandusky, Ohio	29.25	742.9	29.91	759.7	55	12.8	87	SW	12	5.4			10ks		NW	0	0	Cloudy	
Sandy Hook, New Jersey	29.77	756.1	29.79	756.7	64	17.8	62	N	13	5.8		5ck	5ks	SW	Calm	0	0	Cloudy	
San Francisco, California	29.98	761.5	30.04	763.0	55	12.8	93	SW	4	1.8			Fog		Calm	0	0	Foggy	
Santa Fé, New Mexico	23.44	595.4	29.98	761.5	60.5	15.8	70	SE	8	3.6			10s		W	0.47	11.9	Cloudy	
Savannah, Georgia	29.78	756.4	29.87	758.7	79	26.1	73	W	10	4.5		2c	0	W		0.57	14.5	Fair	
Shreveport, Louisiana	29.80	756.9	30.01	762.2	75	23.9	81	NE	8	3.6			10s		NE	0	0	Cloudy	
Smithville, North Carolina	29.77	756.1	29.80	756.9	76	24.4	85	W	5	2.2		2cs	5s	W	SW	0.22	5.6	Cloudy	
Springfield, Massachusetts	29.50	751.6	29.71	754.6	63	17.2	72	N	4	1.8		5ck	5s	SW	NW	0	0	Cloudy	
Stanwix, Arizona					84	28.9	64	SW				0	0			0	0	Clear	
Stockton, Texas					70	21.1	71	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass	29.70	754.4	29.75	755.6	63	17.2	78	NE	12	5.4			10s		NW	0.12	3.0	Cloudy	
Toledo, Ohio	29.22	742.2	29.88	758.9	56	13.3	80	SW	2	0.9			10s		Calm	0.04	1.0	Cloudy	
Tucson, Arizona	27.50	698.5	30.05	763.3	77	25.0	46	NE				0	2s		Calm	0	0	Fair	
Tybee Island, Georgia	29.83	757.7	29.86	758.4	75	23.9	85	W	10	4.5		5c	0	W		0.08	2.0	Fair	
Umatilla, Oregon	29.66	753.4			59	15.0	57	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	73	22.8	95	Calm	0	0			10s		Calm	0.76	19.3	Cloudy	
Virginia City, Montana	24.43	620.5	29.91	759.7	55	12.8	50	SE	6	2.7			10s		Calm	0	0	Cloudy	
Visalia, California	29.58	751.3	29.94	760.5	58	14.4	60	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	29.73	755.1	29.84	757.9	65	18.3	78	N	7	3.1		1ck	5s	SW	SW	0	0	Fair	
Wickenburg, Arizona					71	21.7	42	N				0	8ks		Calm	0	0	Fair	
Wilmington, N. Carolina	29.71	754.6	29.78	756.4	74	23.3	90	SW	3	1.3		8k	0	SW		4.99	126.7	Fair	
Winnemucca, Nevada	25.71	653.0	30.07	763.8	44	6.7	23	N	7	3.1		0	0			0	0	Clear	
Wood's Holl, Mass	29.70	754.4	29.75	755.6	66	18.9	78	NE	4	1.8			10s		NW	0	0	Cloudy	
Yankton, Dakota	28.95	735.3	30.26	768.6	48	8.9	85	Calm	0	0		5c	0	W		0	0	Fair	
Yuma, Arizona	29.65	753.1	29.80	756.9	75	23.9	56	E	2	0.9		2k	0			0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.83	757.7	29.88	758.9	43.0	6.1	96	S	8	3.6		0	0			1.25	31.7	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.99	761.7	30.01	762.2	85	29.4	75	NE	1.2	0.5		0	hz; ks		S	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.17	766.3	30.18	766.6	81	27.2	82	Calm	0	0		8c	0	SE		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.91	759.7	29.99	761.7	84	28.9		E			1					0	0	Clear	F. M. Everett.
Pt-a-Pitre, G'd'loupe, W. I.	29.88	758.9	29.90	759.4	84	28.9	91	E				0	5ks		E			Clear	L. V. Bigard.
Bridgetown, Barbados, W. I	30.00	762.0	30.03	762.7	81	27.2	87	E	3	1.3			5ks					Cloudy	E. Racker.
Paramaribo, D. Guiana, S. A.			30.04	763.0	84	28.9	75	E			2	3c	4s	E		0.640	16.26	Clear.	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.30	642.6			66.0	18.9	80	NW			1		9s; ks			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.07	763.8	30.09	764.3	73.5	23.1		Calm			0					0.02	0.5		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,675 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.02	762.5	58	14.4	56	13.3	87	WNW	12	5.4			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.14	765.5			79	26.1	82	NNW	7	3.1			9			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.84	757.9	75	23.9	62	16.7	72	Calm	0	0			10			0.05	1.3			Cloudy	
Naval Hospital, Yokohama, Japan	30.03	762.7	78	25.6	76.5	24.7	88	Calm	0	0			18;hz		SSW	0	0			Fair	
Alert, Yokohama, Japan	30.18†	766.6†	80	26.7	80	26.7	87	Calm			0		1		S			Smooth		Lightning	
Alliance, Smyrna, Turkey	30.08	764.0	85	29.4	85	29.4	57	NW			2–3		2		N					Clear	
Ashuelot, Che-foo, China	30.13	765.3	75	23.9	72	22.2	80	S			2		0							Blue sky	
Canonicus, New Orleans, La	30.03	762.7	55	12.8	78	25.6	86	WSW			2		5							Partly cl'dy	
Colorado, New York, N. Y.	29.85	758.2	65	18.3	65	18.3	89	NW	11	4.9			7		SW	0.03	0.8			Cloudy	
Despatch, Beikos Bay, Bosphorus	30.14	765.5	79	26.1	76	24.4	73	N			1		1		Calm			Smooth		Clear	
Essex, N. 40° 42′, W. 42° 54′	30.17	766.3	75	23.9	76	24.4	91	NNE			2		6		N&E			Smooth	N&E	D. clouds	
Franklin, Norfolk, Va.	29.82	757.4	79	26.1	74	23.3	90	N	3	1.3			1		N	2.	51.			D. clouds	
Frolic, Rio de Janeiro, Brazil	30.46	773.7	66	18.9	68	20.0	84	N			1		6k		Calm	Light	Light			D. clouds	
Gettysburg, Leghorn, Italy	29.87‡	758.7‡			81	27.2	91	SW			1		9		Calm	0	0	Light	SW	D. clouds	
Kearsarge, Nagasaki, Japan	30.08	764.0			78	25.6	100	N&E			1		3		W	0	0	Smooth		D. clouds	
Lackawana,																					
Marion, Constantinople, Turkey.	30.03	762.7	77	25.0	79	26.1	70	ENE			2		2		N	0	0	Smooth		D. clouds	
Michigan, Erie, Pa	29.30	744.2	61	16.1	61	16.1	77	W			3		0							Clear	
Monocacy, Yokohama, Japan	30.10	764.5	81	27.2	82	27.8	91	SSE			2		1		S&E	0	0			D. clouds	
New Hampshire, Port Royal, S. C.	30.05	763.3			77	25.0	86	W	14	6.3			8		W	0	0			D. clouds	
Omaha, Mexillones, Bolivia	30.15	765.8	66	18.9	65	18.3	68	S	1	0.4			1		S	0	0	Smooth		Clear	
Onward, Callao, Peru	30.16†	766.1†	70	21.1	67	19.4	89	SE			3		8					Long	W	D. clouds	
Ossipee, Norfolk, Va	29.86	758.4	75	23.9	74	23.3	81	NNE			2		7		E					D. clouds	
Palos, Shanghai, China	30.12	765.0	75	23.9	74	23.3	86	E			2		3		S&E	0	0			Clear	
Plymouth, New York, N. Y.	30.05	763.3	69	20.6	64	17.8	100	NNW			2		10		S					Cloudy	
Ranger, N. 23° 40′, E. 117° 55′	30.10	764.5			84	28.9	79	E			0–1		2		Calm			Smooth		Clear	
Richmond, Boston, Mass																					
Rio Bravo, Brownsville, Texas	29.90	759.4			79	26.1	91	WSW			1		2		SW					D. clouds	
Santee, Annapolis, Md.	29.91	759.7	76	24.4	68	20.0	65	NNE			1		9		E	0	0			Cloudy	
St. Louis, League Island, Pa	29.80	756.9	67	19.4	65	18.3	68	NW	5	2.2			10		SW	0	0			Overcast	
Tennessee, Yokohama, Japan	30.04	763.0	81	27.2	78	25.6	82	E	3	1.3			0			0	0	Smooth		Blue sky	
Trenton, Villefranche, France	29.98†	761.5†	84	28.9	83	28.3	71	SW	21	9.4			4		S&W	0	0			D. clouds	
Vandalia, Beirut, Syria	30.02	762.5	85	29.4	84	28.9	68	NNW			1		0							Blue sky	
Wabash, Boston, Mass	29.75	755.6	65	18.3	63	17.2	72	NE	7	3.1			10			0.04	1.0			D clouds	
Wyoming, Washington, D. C.	30.05†	763.3†	70	21.1	68	20.0		N			2		7		N					D. clouds	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio N. 30° 46′, E. 129° 00′					83	28.3		NNW			3		1			Smooth	NNW	Clear	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 37° 30′, E. 177° 18′			30.21†	767.3†	70	21.1		WSW			5		k		WNW	Long	W	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 49° 38′, W. 7° 40′			29.78	756.4	56.5	13.6	??	S			6		Haze			Smooth		Drizzling	Capt. A. Jaeger.
S. S. Ohio N. 47° 34′, W. 27° 34′			30.31	769.9	65.5	18.6	78	Calm			0		k	SE		Tranq'l		Threatening	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Hyannis, Mass.			29.75	755.6	72	22.2	67	NNE	10	4.5			10s		NE			Overcast	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 3, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Nemours			30.04	763.0	84.2	29.0	69	N			2		3			0	0	Fair	Michel.
Algiers			30.06	763.5	83.8	28.8	73	N			1		10			0.020	0.5	Hidden	Peter.
La Calle			30.00	762.1	86.7	30.4	70	NNE			3		5			0	0	Fair	Fleury.
Tunis			30.00	761.9	98.6	37.0		SE			3		3			0	0	Fair	Jacques.
Sfax			30.07	763.7	87.8	31.0		SE			4		2			0	0	Clear	Husson.
Saida			30.01	762.3	71.1	21.7		N			4		2			0	0	Clear	Millot.
Tebessa			30.08	763.9	89.2	31.8		SW			2		2			0	0	Clear	Bourgeois.
Geriville			30.02	762.5	78.8	26.0	45	NNW			3		10			0	0	Hidden	Lemaillot.
Laghouat			30.07	763.6	95.0	35.0	32	W			2		4			Inap.	Inap.	Fair	François.
Biskra			30.08	764.0	101.1	38.4	31	SE			1		8			0	0	Cloudy	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Agram	29.36	745.8	29.90	759.4	66.2	19.0	75	SW			2		10			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.23	742.4	29.98	761.6	63.3	17.4	72	NE			2		10			0.004	0.1		Dr. Wierzbiski.
Eperies	29.06	738.1	29.91	759.8	65.5	18.6	70	Calm			0		10k;s		Calm	0.094	2.40		Julius Mikolik.
Gratz	28.72	729.5	29.95	760.7	62.8	17.1	79	NNE			2		10			0.909	23.1		Andreas Rospini
Hermannstadt	28.47	723.1	29.82	757.4	76.5	24.7	66	NNE			1		10			0.222	5.65	Raining	Prof. Reissenberger.
Kremsmünster	28.57	725.7	29.89	759.2	59.4	15.2	87	NE			1		10			0.236	6.0		Prof. C. Wagner.
Lemberg	28.97	735.9	29.95	760.7	57.9	14.4	84	N			2		10			0	0		Dr. T. Stanecki.
Pola	29.72	754.9	29.83	757.6	81.9	27.7	59	WSW			3		8cks			0	0		I.R. Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.59	751.6	29.86	758.4	75.2	24.0	57	N			2		10			0	0		Karl Stancel.
Trieste	29.74	755.5	29.85	758.1	71.6	22.0	80	E			1		4			1.606	40.8		P. Busin.
Vienna	29.25	742.9	29.94	760.4	60.6	15.9	80	Calm			0		10			0.315	8.0	Rain and fog	I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Arlon	28.30	718.9	29.80	757.0	52.3	11.3	85	SW			5		10			0.445	11.3		
Brussels	29.48	748.9	29.68	753.9	61.5	16.4	64	SSW			4	2	6	SSW	SSW	0.091	2.30		Royal Observatory.
Furnes																		Raining	
Maeseyck	29.63	752.5	29.76	755.8	55.8	13.2	93	ESE			4		10			0.752	19.1	Thunder-storm	

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.95	760.7	30.05	763.3	53.4	11.9		NW	19	8.5			4			0	0	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	30.05	763.3	30.06	763.5	57	13.9		NW			3		7					D. clouds	William McNeil.
Armagh, Observatory			30.14	765.5	53.8	12.1		N	6	2.7			3					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.02	762.5	46.7	8.2		NNE	26	11.6			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			30.18	766.6	57.3	14.1		NW			3		3					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.57	751.1	29.96	761.0	48.9	9.4		N			1		10			1.14	29.0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.74	755.4	54.9	12.7		N			2		10					Heavy rain	H. Todd. [H.O
Cardington			29.77	756.1	53.0	11.7		NE			4		10					Raining	John McLaren.
Chatham, School M. E	29.55	750.6	29.68	753.9	56.2	13.4		NW			2		9					Overcast	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.55	725.2	30.03	762.7	48.0	8.9		N			6		4					Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.08	764.0	30.11	764.8	55	12.8		NNE			5		3					D. clouds	J. Mac Gowan.
Dover	29.62	752.3	29.64	752.8	60	15.6		E			4		6					½ clouded	J. Costello.
Eccles, (near Manchester)			29.98	761.5	47.3	8.5		N	3.4	1.5			10					Squally	Thomas Mackereth.
Falmouth, Observatory	29.82	757.4	30.06	763.5	54.6	12.6		NW			6		10					Raining	The Staff.
Fort Napier, (Natal)	27.76	705.1	29.97	761.2	70.3	21.3		E			2		2					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			30.00	762.0	84.0	28.9		N			1		4					D. clouds	
Galway, Queen's College			30.15	765.8	60	15.6		NW			1		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.98	761.5	30.02	762.5	81.6	27.6		E			3		1					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.87	758.7	30.07	763.8	53.8	12.1		NNW			3		8					Squally	D. G. Maclean.
Great Yarmouth	29.74	755.4	29.74	755.4	59	15.0		ESE			2		6					Thunder-storm	G. T. Watson.
Greenwich, Royal Obs'y	29.51	749.5	29.68	753.9	55.9	13.3		NNE			1		10			0.77	19.6	Overcast	The Staff, for G. B. Airy.
Guernsey	29.67	753.6	29.89	759.2	54	12.2		WNW			6		8			Blank	Blank	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.04	763.0	56	13.3		NW			6		4ck			0.47	11.9	Fair	M. P. Moyle.
Holyhead	30.03	762.7	30.08	764.0	54	12.2		N			5		3					D. clouds	John Tilston.
Jersey	29.62	752.3	29.91	759.7	56.2	13.4		NW			8		8			Blank	Blank	Squally	J. Fisher.
Kew, Observatory			29.70	754.4	57.7	14.3		NE					10k					Threatening	The Staff.
Kingstown	30.09	764.3	30.12	765.0	54	12.2		NNE			4		5					D. clouds	George Mitchell.
Leicester, Museum			29.84	757.9	48.9	9.4		N			3		10					Raining	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.94	760.5	30.01	762.2	85.8	29.9		SW			1		0					Blue sky	Corp'l. P. Bravis, A.H.C.
Nairn	29.96	761.0	30.05	763.3	55	12.8		NW			1		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.02	762.5	84.2	29.0		SW			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.69	754.1	29.88	758.9	48.0	8.9		N			6		10d		N	0.867	22.02	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.34	745.2	29.87	758.7	46.0	7.8		NNE			6		10					Heavy rain	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.77	756.1	50	10.0		N			3		10					Raining	F. Lucas
Plymouth			29.97	761.2	57.5	14.2		NW			5		7					D. clouds	John Merrifield.
Roche's Point	30.08	764.0	30.12	765 0															W. Kennedy.
Saint Ann's Head	29.89	759.2	30.05	763.3	52	11.1		NNW			6		7					Showery	John C. Walker.
Sandwick Manse, (Orkneys)			30.08	764.0	50.8	10.4		NW	18	8.0			0					Blue sky	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.90	759.4	82.5	28.1		SW			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.70	754.4	29.94	760.5	47.1	8.4		NE			4		10			0.465	11.81	Raining	W. F. Cooper.
Silloth Rectory	30.10	764.5	30.13	765.3	56.4	13.6	54	W			1		4			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					46.1	7.8		NE			2		10					Raining	W.C. Carlisle, for Rev. S.J. Perry
Stornoway, Lews C., (Hebr.)			30.10	764.5	52	11.1		NW			2		5					D. clouds	John Smith.
Stratfield Turgiss	29.52	749.8	29.73	755.1	53.5	11.9		NW			2		10					Raining	Rev. C.H. Griffith, F.M.S.
Thurso			30.04	763.0	52	11.1		NW			4		6					D. clouds	John Trotter.
Truro, Royal Institution			30.08	764.0	58	14.4		NW			8		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.23	767.8	56.9	13.8		NNW	14	6.3			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		NW			4		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.16	766.1	30.20	767.1	66.0	18.9	62	SSE	15	6.7		0	1						The Staff, for E.J. Stone.
Hobart Town, (Tasmania)			29.83	757.7	50 0	10.0	76	NW			2		10kn			0.09	2.3	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.08	764.0	55.0	12.8		NE			1		7k			0.09	2.3	Fine	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.11	764.8	74.0	23.3	68	ENE	13.6	6.1						0.03	0.8		C. Meldrum.
Melbourne, Observatory	30.14	765.5	30.23	767.8	51.5	10.8	69	NW	10	4.5			10			0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.15	765.8	54	12.2		N			3	0	0			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.98	761.5	51	10.6		E			4	2	5	N					Robert Burnet.

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

Marine Series. Vessels.															Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria																		Capt. W. Watson.
S. S. Batavia																		Capt. J. E. Moulund.
Ship Camperdown																		Capt. A. T. Miller.
Brig Catherine, N. 46° 10′, W. 52° 35′			29.97	761.2	62	16.7		S			4		10		4		Foggy	Capt. Adam Smith.
Barque Celeste																		Capt. D. F. McKechnie.
S. S. Hibernia																		Capt. W. R. Cato
Barque Maroon																		Capt. A. T. Brown.
Ship Mikado																		Capt. C. C. Prehn.
S. S. Seine, N. 49° 50′, W. 37° 10′			30.06	763.5	61	16.1		W			3		9		0		Overcast	Capt. H. Manning.
Barque Sorata																		Capt. Jas. J. Price.
Schooner Traveller																		Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.30	668.0			68.4	20.2	95	Calm			0		2cs		SE	0	0		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.85	758.3	29.90	759.5	57.2	14.0	64	WNW			2		5						
Fanöe	29.87	758.8	29.89	759.3	57.0	13.9	67	NW			4		4						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	30.05	763.2	30.08	764.1	49.8	9.9	73	NW			2		5						
Vestervig	29.70	754.4	29.87	758.7	54.3	12.4	79	WNW			4		2						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.33	745.0	29.88	759.0	64.4	18	83	W			6		5		W	0.150	3.8	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.95	760.6	30.02	762.6	75.2	24	50	NE			1				W	0	0	Heavy cl'ds	Mr. Giraud, Director.
Bar-sur-Seine	29.32	744.6	29.87	758.6	65.7	18.7	42	W			6		8kn		W	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.47	748.6	29.75	755.7	62.1	16.7	64	W			3		8		WNW	0.217	5.50	Very cloudy	Normal School.
Besançon	29.07	738.4	29.96	760.9	66.6	19.2	61	SW			6		2		SW	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.00	736.6	29.97	761.3	71.6	22	66	SE			2		5k		W	0	0	Cloudy	Normal School.
Bourges, Normal School	29.60	751.7	30.14	765.5	64.4	18	62	W			8		5		W	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.84	757.8	30.05	763.3	58.1	14.5	50	NW			5		5		NW	0	0		The Staff.
Carcassonne, Normal School	29.71	754.7	30.08	764.0	65.1	18.4	80	E			2		10		E	0	0	Covered	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons sur-Marne, N. Sch'l	29.43	747.5	29.74	755.4	61.3	16.3	61	S			8		5n		S	0.161	4.1	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.69	728.6	30.01	762.2	61.4	18.0	50	W			2		8		W	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.01	736.8	29.87	758.6	60.1	15.6	87	W			6		5		SW	0.128	3.25	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.92	734.5	30.06	763.5	75.9	24.4	38	NW			6		2		NW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.86	758.5	30.08	763.9	64.0	17.8	46	SW			6		5		W	0.051	1.3	Cloudy	Motillot, Director.
Le Mans, Normal School	29.63	752.6	29.93	760.3	58.5	14.7	73	NW			6		8		NW	0.12	3.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.0	29.99	761.7	66.2	19	46	S			6				SW	0.071	1.8		Pin, Director.
Lorient, Naval Observatory	30.00	762.0	30.10	764.5	61.9	16.6	40	NW			6		2		NW	0.071	1.8	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.24	742.7	29.91	759.6	66.6	19.2	41	N			6		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.81	731.7	29.83	757.7	61.7	16.5	46	SW			6		8		SW	0.035	0.9	Very cloudy	Normal School.
Nismes, Normal School	29.83	757.6	30.02	762.5	83.1	28.4	36	SE			4		5		SE	0.004	0.1	Cloudy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.55	750.6	29.79	756.6	59.4	15.2	75	W			1		5kn		W	0.227	5.77	Cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.07	763.8	30.10	764.6	68.0	20.0	62	WNW			6		8		NW	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.67	753.6	29.76	755.8	59.7	15.4	68	W			8		8		W	0.370	9.4	Very cloudy	F. Lucard, Director.
Tarbes, Normal School	29.14	740.2	30.22	767.6	59.7	15.4	89	W			2		10		W	0	0	Covered	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0	0		L'Abbé Marchésl.
Marseilles, Observatory			29.98	761.4	78.4	25.8	37	NW			2		1			0	0		The Staff.
Mont-Louis	24.96	633.9	30.27	768.9	57.4	14.1	56	NNW	18.6	8.33			5		N	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.51	749.5	29.78	756.5	62.6	17.0	55	WSW			4				WSW	0.228	5.8		Marié Davy, Director.
Perpignan			30.07	763.7	70.0	21.1	56	N	18.6	8.33			7		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.42	544.0			32.7	0.4		SW			1		10					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.64	575.0			38.1	3.4		SW			2		10			0.283	7.2	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.63	752.6	29.80	756.8	60.6	15.9	65	SW			4		9			0.189	4.8	Rainy	E. Renou.
Toulouse, Observatory	29.44	747.8	30.17	766.3	67.8	19.9	43	WNW			4		7			0.102	2.6		The Staff.
Tours	29.77	756.2	29.97	761.2	63.0	17.2	51	W			4		8		WNW	0.091	2.3		C. Marquet.
Versailles, (near Paris)			29.80	756.9	58.6	14.8	76	NW			4		10			0.132	3.36	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.85	758.2	29.87	758.8	74.3	23.5	84	E	8.7	3.9			10kn			0	0	Lightning	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,286 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. T. Hoh.
Berlin	29.74	755.4	29.90	759.4	67.6	19.8	46	S			1		4			0	0		Prof. Arndt.
Breslau	29.45	747.9	29.98	761.4	65.8	18.8	43	SSE			4		5			0	0		Royal University Obs'y.
Carlsruhe	29.38	746.2	29.79	756.7	65.8	18.8	65	SW			5		1			0	0		Albert Senz.
Cassel	29.28	743.8	29.89	759.2	61.2	16.2	72	E			2		10	S		0.036	0.92		Dr. H. Möhl.
Crefeld	29.58	751.4	29.74	755.5	58.1	14.5	85	S			2		10			0.04	1.	Raining	Director Lose.
Emden	29.79	756.6	29.82	757.5	64.8	18.2	48	E			3		1			0	0		Prof. Prestel.
Frankfort on the Main	29.51	749.6	29.87	758.7	63.5	17.5	71	S			1		8			0.008	0.2		Physical Society.
Friedrichshafen	28.48	723.5	29.88	759.0	64.8	18.2	74	NW			2		8	NW		0.008	0.2	Thunder-storm	M. Wilhelm.
Hamburg	29.83	757.6	29.90	759.4	61.3	16.3	58	S			1		4cs	S		0.150	3.8	Fair	Captain F. Hegemann.
Kiel	29.87	758.7	29.89	759.1	58.8	14.9	72	NE			2		5			0.012	0.31		Prof. G. Karston.
Königsberg, (Prussia)	29.89	759.2	29.97	761.2	60.8	16.0	58	W			2								Prof. E. Luther.
Köslin			29.97	761.1	61.3	16.3		W			2		2			0	0		H. Müller.
Leipsic, Observatory	29.47	748.6	29.88	759.0	67.6	19.8	46	ESE			2		8	ESE		0	0		Prof. Bruhns.
Memel, Naval School	29.89	759.1	29.93	760.3	58.1	14.5	68	WSW			6		6c;s	WSW				Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.94	760.4	29.95	760.8	63.3	17.4	51	W			3		4	WSW		Inap.	Inap.		A. Lothes.
Posen	29.72	754.9	30.00	762.0	67.6	19.8	55	S			6–7		4			Blank	Blank		Dr. Magener.
Strassburg Obs., (in Alsace)	29.30	744.1	29.83	757.6	69.1	20.6	54	SW			5		7	W		0	0		Dr. Schur.
Stuttgart	28.91	734.3	29.84	757.9	63.3	17.4	74	W			3		7	W		0.008	0.2	Light rain	Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.35	720.0	29.82	757.3	61.9	16.6	74	S			2		1	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.97	761.2	30.00	762.0	58.6	14.8	69	W			3		5			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.60	751.8	29.95	760.6	90.1	32.3		SW					c					Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.54	750.3	29.59	751.6	83.1	28.4	83	WSW	25.0?	11.2?			10			0	0	Threatening	
Deesa																			
Bombay	29.71	754.6	29.75	755.6	82.5	28.1	88	WSW	17.0	7.6			10		WSW	0.14	3.6	Misty	
Poona	27.70	703.6	29.66	754.1	79.4	26.3	70	SW					9	W	SW	0	0	Lightning	
Lahore	28.99	736.3	29.74	755.3	75.9	24.4	91	E	5.5	2.5			10			1.55	39.3	Cloudy	
Belgaum	27.28	692.8	29.83	757.6	71.0	21.7	85	W	10.0	4.5			9		W	0	0	D. clouds	
Bangalore																			
Roorkee	28.79	731.4	29.67	753.5	93.2	34.0	47	SE	7.1	3.2			9			0	0		
Agra	29.08	738.7	29.63	752.6	89.2	31.8	65	E					3		E	0	0		
Trichinopoly																			
Nagpur	28.68	728.5	29.72	755.0	79.6	26.4	87	Calm	3.2	1.4			8			1.01	25.7	Drizzling	
Madras																			
Lucknow	29.30	744.1	29.66	753.2	95.3	35.2	44	SW	3.2	1.4			4			0	0	D. clouds	
Allahabad	29.37	746.0	29.67	753.7	89.0	31.7	82	Calm	0.9	0.4			3			0	0	D. clouds	
Patna	29.53	750.0	29.70	754.5	90.9	32.7	58	Calm	1.9	0.8			5			0	0	D. clouds	
Hazaribagh	27.73	704.3	29.72	754.8	82.8	28.2	71	SSE	7.0	3.1			2			0	0	Foggy	
Cuttack	29.65	753.0	29.73	755.0	85.3	29.6	76	E	2.2	1.0			1			0	0	Blue sky	
Calcutta (Alipore)	29.69	754.2	29.72	754.8	87.8	31.0	73	ESE	3.0	1.3			2		S	0	0	D. clouds	
Goalpara	29.28	743.7	29.66	753.4	87.7	30.9	72	Calm	0.3	0.1			1			0	0	D. clouds	
Chittagong	29.62	752.4	29.72	754.8	88.7	31.5	87	WSW	9.0	4.0			5			0	0	Gloomy	
Sibsagar	29.36	745.7	29.69	754.1	85.7	29.8	88	ENE	2.0	0.9			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.36	720.3	29.71	754.5	85.5	29.7	65	SW	3.8	1.7			6	SW	SW	0	0	D. clouds	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrument'al error and temperature. Inches.	Barometer. Corrected for instrument'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.17	563.0	29.86	758.5	49.1	9.5	55	W			8		4	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.15	562.7	29.85	758.3	48.4	9.1		W			6		10			0.161	4.1		Signora Ernesta Manfredi.
Udine	29.41	747.0	29.81	757.1	75.9	24.4	58	NE	5.6	2.5			6			0.177	4.5		Prof. Giovanni Clodig.
Padua	29.69	754.0	29.79	756.7	79.0	26.1	51	W	3.8	1.7			3	SW		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.60	751.9	29.79	756.6	81.3	27.4	51	W	1.3	0.6			3	W		0	0		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.52	724.5	29.80	756.8	79.9	26.6	60	SSE			1		5			0.677	17.2		Prof. Trionfini Carlo.
Domodossola	28.75	730.3	29.74	755.4	73.8	23.2	63	S			4		5			0	0		Prof. Giuseppe Calza.
Milan	29.31	744.5	29.80	757.0	86.2	30.1	60	E			1		2	ENE		0	0		Ab. Gio. Capelli.
Pavia	29.45	748.1	29.78	756.5	80.6	27.0	56	SE			1		3	SW		0.079	2.0		Prof. Gio. Cantoni.
Moncalieri	28.92	734.6	29.79	756.7	80.4	26.9	39	WSW	1.3	0.6			1	W		0	0		Prof. P. F. Denza.
Mondovi	27.97	710.5	29.80	757.0	76.8	24.9	45	WNW			4		3	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.65	753.0	29.86	758.4	71.6	22.0	61	SW			8		4	SW		0	0		Prof. L. Vassallo.
Genoa	29.69	754.2	29.85	758.3	79.2	26.2	66	SE	6.3	2.8			8	SE		0	0		Prof. G. M. Garibaldi.
Piacenza	29.55	750.6	29.80	756.8	79.2	26.2	52	N			2		8			0	0		Dott. G. Manzi.
Parma	29.49	749.0	29.79	756.6	82.6	28.1	50	WSW			8		3			0	0		Prof. P. Pigorini.
Florence	29.67	753.7	29.92	759.9	82.8	28.2	51	SW			2		8			0	0		Cav. F. Meucci.
Leghorn	29.84	757.9	29.92	760.0	81.5	27.5	54	WSW	12.5	5.6			9			0	0		Prof. P. Monte.
Siena	28.76	730.4	29.92	760.0	73.9	23.3	70	S	0	0			7	SW		0.110	2.8		Prof. L. Toscani.
Urbino	28.40	721.4	29.89	759.3	71.2	21.8	61	SW			2		10			0.059	1.5		Prof. P. Serpieri.
Pesaro	29.84	757.8	29.88	759.0	77.5	25.3	72	S	6.3	2.8			9	SW		0	0		Prof. Luigi Guidi.
Ancona	29.79	756.7	29.89	759.3	79.9	26.6	66	SSE			4		8	SW		0.098	2.5		Prof. F. DeBosis.
Grosseto	29.85	758.3	29.96	761.0	76.6	24.8	79	E			4		8	SE		0.240	6.1		Avv. P. Ponticelli.
Rome	29.80	757.0	29.97	761.3	82.6	28.1	64	SW	13.0	5.8			9			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.80	756.9	29.99	761.8	84.6	29.2	75	SW			4		9	SW		0	0		Prof. L. Palmieri.
Lecce	29.72	755.0	29.97	761.1	95.0	35.0	25	S	18.6	8.3			3	S		0	0		Prof. C. DeGiorgi.
Cosenza	29.17	740.9	30.01	762.2	92.3	33.5	37	NNW	1.8	0.8			0			0	0		Prof. F. D. Conti.
Cagliari	29.69	754.1	29.87	758.7	89.6	32.0	35	NW			4		8			0	0		Prof. A. Pacinotti.
Rhosto, (Sicily)	29.03	760.1	29.97	761.3	85.6	29.8	65	E			2		0			0	0		Prof. F. Cafiero.
Palermo	29.68	753.9	29.92	760.0	87.1	30.6	57	E	3.8	1.7			0			0	0		Prof. G. Cacciatore.
Caltanissetta	28.10	713.7	29.94	760.4	86.4	30.2	29	SW			1		0			0	0		Prof. A. Pagani.
Syracuse	29.83	757.6	29.90	759.5	91.8	33.2	41	S			6		0			0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.45	747.9	30.00	762.0	82.9	28.3	75	WSW	8.7	3.9			10	NW		0	0		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.83	757.7	29.91	759.7	72	22.2	95	Calm	0	0			10n			0	0	Threatening	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Mexico, Central Obs'y	23.15	587.9	30.15	765.8	53.6	12.0	85	NW	0.9	0.42		1c	2k	SW	NE	0.04	1.0	Clear.	Mariano Bárcena
																			Vicente Reyes.
																			Miguel Perez.
																			(Engineers in charge.)

NOTE.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	29.71	754.5	29.71	754.5	59.7	15.4		E			4					0	0		
Groningen	29.77	756.2	29.83	757.6				E			2					0	0		
Helder	29.77	756.1	29.77	756.1	60.8	16.0		ENE			4					0	0		
Utrecht	29.72	755.0	29.77	756.2	50.7	13.7	81	E			3		10			0.161	4.1	Dull	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.76	756.0	29.82	757.4	51.8	11.0	80	NW	8.3	3.7			3			0	0		
Brönö	29.64	752.9	29.68	753.9	52.2	11.2	83	SW	7	3			8			0.024	0.6		
Christiania	29.57	751.1	29.72	754.9	61.5	16.4	62	WSW	7	3			7			0	0		
Tromsö	29.57	751.0	29.61	752.1	48.6	9.2	81	Calm	0	0			0			0.150	3.8		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra, (Azores)	30.04	763.1	30.23	767.9	70.2	21.2	89	E	9.8	4.4			6			0.394	10.0		Dr. J. A. Sampaio
Campo Major	29.06	738.2	30.04	763.0	83.3	28.5	30	SW	3.8	1.7			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.08	764.0	30.17	766.2	76.5	24.7	78	SSE	4.9	2.2			5			0.028	0.7		Capt. D. A. de Cunha.
Lisbon, Observatory	29.75	755.7	30.10	764.6	75.4	24.1	48	N	15.0	6.7			1			0	0		The Staff.
Ponta Delgada, (Azores)	30.16	765.9	30.23	767.7	73.0	22.8	79	ESE	3.1	1.4			2			0.047	1.2		

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

NÁVAL SERIES. VESSELS.	Sea or swell: Height scale 0–9	Direction from—		
S. S. India				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

RUSSIAN SERIES.

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

Warsaw	29.56	750.8	29.97	761.2	61.5	16.4	62	Calm	0	0			8						Astronomical Obs.
Wilna	29.55	750.5	29.96	761.0	61.5	16.4	56	W	2	1			3						Astronomical Obs.
Dorpat	29.51	749.6	29.75	755.7	56.8	13.8	61	WSW	13	6			2						Physical Cabinet.
St. Petersburg	29.58	751.4	29.60	751.8	53.4	11.9	81	WSW	20	9			9						Central Physical Obs
Kuopio	29.19	741.3	29.50	749.4	45.7	7.6	100	NW	7	3			10					Raining	Ch. Forsten.
Kieff	29.35	745.6	29.99	761.7	54.9	12.7	94	ESE	4	2			10					Light rain	Physical Cabinet.
Nikolaiev	29.87	758.7	29.94	760.5	74.5	23.6	81	W	0	0			10						Kurdakof.
Kertch	29.93	760.2	29.95	760.7	79.2	26.2	72	WSW	2	1			4						Lagorio.
Moscow	29.40	746.8	29.94	760.4	61.9	16.6	61	SE	13	6			7						Meteorological Obs.
Lugan	29.66	753.4	29.86	758.4	79.0	26.1	43	NNE	4	2			7						Meteorological Obs.
Archangel	29.39	746.5	29.41	747.0	53.4	11.9	84	S	13	6			10						Ogorodnikof.
Tiflis	28.50	723.8	29.82	757.3	91.4	33.0	37	SE	9	4			2						Physical Observatory.
Astrakhan	30.03	762.8	29.95	760.7	84.0	28.9	41	ESE	4	2			5						Sebastianof.
Kasan	29.58	751.4	29.85	758.1	62.1	16.7	48	SW	7	3			2						Physical Cabinet.
Orenburg	29.62	752.4	29.99	761.7	57.2	14.0	82	E	13	6			10						Tschernischei.
Ekaterinburg	28.81	731.8	29.73	755.2	61.5	16.4	45	WSW	22	10			5						Meteorological Obs
Nukuss	29.78	756.5	30.01	762.2	80.2	26.8	43	N	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.37	720.7	30.02	762.5	72.9	22.7	70	Calm	0	0			0						Michelson.
Barnaul	29.48	748.7	29.99	761.7	60.6	15.9	57	NW	0	0			7						Meteorological Obs.
Yeniseisk	29.59	751.5	29.73	755.2	61.0	16.1	79	WNW	2	1			1						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.69	754.2	29.84	757.8	75.9	24.4	69	Calm	0	0			0						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					55.4	13.0	80	Calm	0	0			10						

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez
Madrid, Royal Observatory	27.86	707.5			84.2	29.0	36	S	5.1	2.3		0	2			0	0	Partly cl'dy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.97	761.1	30.05	763.2	80.5	26.9	85	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.00	762.0	30.10	764.4	76.1	24.5	67	WSW	13.4	6.0		0	2		WSW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.95	760.6	78.1	25.6	90	SE				8kn	0			0.010	0.25	Cloudy	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Haparanda	29.63	752.6	29.67	753.6	55.4	13.0	57	N			2		5			0	0		
Umea	29.63	752.5	29.68	753.8	55.8	13.2	71	N			2		10			0	0		
Hernosand	29.61	752.0	29.66	753.3	52.5	11.4	91	Calm			0		9			0.138	3.5	Raining	
Stockholm	29.47	748.5	29.65	753.0	57.6	14.2	65	Calm			0		7			0.024	0.6		
Wisby	29.72	754.8	29.78	756.3	56.1	13.4	62	W			6		3			0	0		
SUB-SERIES.																			
Upsala	29.56	750.9	29.64	752.8	55.6	13.1	73	SW	6.0	2.7			10		WNW	0.061	1.55	Raining	Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.54	725.0	29.92	759.9	71.8	22.1	51	SSW			2		6			0.012	0.3	Cloudy	The Observatory.
Zurich	28.30	718.9	29.03	760.1	58.6	14.8	90	W			4		7			0.059	1.5	Thunder-storm	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —2.4 mm; Thermometer, +2.3 cent.; Relative Humidity, —8 per cent.

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

TURKISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.95	760.7	82.0	27.8	59	SE	0	0						0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.03	762.8	88.9	31.6		SE			1		0						B. Stéfanidès.
Valona			30.12	765.0	92.7	33.7		SW			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			29.96	761.0	89.6	32.0		SE			1		0						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.76	755.9	29.87	758.8	86.5	30.3	55	WNW			2		1ks		SW	0	0	D. clouds	Prof C. V. A. Van Dyck

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

CANADIAN SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B	29.49	749.0	29.56	750.8	60.9	16.1	93	NE	5	2.2			10			0.53	13.5		Hon. J. Ferguson.
Brockville, Ontario			29.78	756.4	49	9.4		W	1	0.4		0	0			0	0	Clear.	W. R. Bigg.
*Chatham, N. B			29.59	751.6	61	16.1	97	N	1	0.4			10n		NE	0.21	5.3	Heavy rain	G. A. Blair.
Charlottetown, P. E. Island			29.59	751.6	65	18.3	99	S	3	1.3			10n		Calm	0.250	6.35	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.52	749.8	29.71	754.6	50.0	10.0	89	NW			2	0	3s			0.585	14.86	Clearing	James Smith, M. A.
Dalhousie, N. B	29.58	751.3	29.61	752.1	53	11.7	85	W			1					0	0	Threatening	H. A. Johnson.
Esquimault, B. C	30.07	763.8	30.12	765.0	55.7	13.2	97	Calm				0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			29.60	751.8	52	11.1	76	NE	5	2.2		5k	5s	Calm	Calm	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	29.54	750.3	29.60	751.8	55.0	12.8	89	Calm	0	0		es	10s		S	0.02	0.5	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.91	759.7	51	10.6	96	Calm	0	0		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.12	739.6	29.90	759.4	55.7	13.2	71	NW			4	5c	3n	NW		0.064	1.63	Unsettled	H. J. Strang, M. A
Granton, Ontario	28.82	732.0	29.92	760.0	48	8.9	100	SW			1	1k	0	E		0.28	7.1	Clear	James Grant.
*Halifax, N. S	29.39	746.5	29.52	749.8	65	18.3	99	NE	3	1.3			10n			0.490	12.68	Heavy rain	F. Allison, M. A.
Hamilton, Ontario	29.54	750.3	29.91	759.7	51.9	11.1	74	NW			2	3c	0	NW		0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.87	758.7	29.90	759.4	69	20.6	85	SW			2		10n			0.30	7.6	Overcast	E. Weedon.
*Kingston, Ontario	29.46	748.3	29.83	757.7	50	10.0	77	NW	9	4.0		0	0			0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.48	748.8	29.68	753.9	52	11.1	83	W	8	3.6		5cs	2ks	S		Inap.	Inap.	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.13	739.9	29.83	757.7	44	6.7	100	NE	4	1.8			10n		W	0.05	1.3	Light rain	Rev. R Mosley
Peterboro, Ontario	29.10	739.1	29.84	757.9	48.7	9.3	85	NW			1	4c	4d			0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.22	742.2	29.91	759.7	50	10.0	86	W	10	4.5		5k	0	NW		0.09	2.3	Fair	H. Morgan.
Port Hastings, N. S	29.50	750.8	29.60	751.8	67.3	19.6		SE			4					1.90	48.3	Raining	Peter Grant
Port Stanley, Ontario	29.29	744.0	29.93	760.2	52	11.1	84	W	12	5.4		0	0			0.01	0.3	Clear	M. Payne.
*Quebec, Quebec	29.34	745.2	29.65	753.1	53	11.7	86	Calm	0	0			10n		Calm	0.20	5.1	Heavy rain	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.34	745.2	29.79	756.7	48	8.9	85	NW	8	3.6			8s		NW	0.04	1.0	Cloudy	W. H. McIntyre.
St. John, N. B	29.43	747.5	29.59	751.6	61	16.1	94	Calm	0	0			10n			0.27	6.9		G. Murdock, C. E.
*Saugeen, Ontario	29.14	740.1	29.83	757.7	56	13.3	82	NW	10	4.5			10n		W	0.22	5.6	Cloudy	K. Stewart.
Stayner, Ontario			29.81	757.2	49	9.4	78	W	8	3.6			8n		W	0.73	18.5	Clearing	R. J. Cole.
Stratford, Ontario	28.62	726.9	29.89	759.2	49.1	9.5	97	W	9	4.0		1c	2s	NW		0.166	4.21	Fair	C. F. MacGregor, M. A.
*Sydney, C. B	29.64	752.8	29.66	753.4	69	20.6	95	S	10	4.5			10n			0.29	7.4	Cloudy	T. C. Hill.
*Toronto, Ontario	29.49	749.0	29.87	758.7	50	10.0	77	W	11	4.9		2ck	2ks	NW	NW	0.01	0.3	Fair	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					67.5	19.7	92	SE				10k	10s			0.05	1.3	Cloudy.	John Delany.

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.52	749.8	29.74	755.4	55	12.8	93	NW	4	1.8		0	5ks		NW	0.08	2.0	Fair	
Alpena, Michigan	29.23	742.4	29.88	758.9	48	8.9	85	W	6	2.7			10s		W	Inap.	Inap.	Cloudy	
Atlantic City, New Jersey	29.83	757.7	29.85	758.2	60	15.6	65	NW	15	6.7		0	0			0	0	Clear	
Augusta, Georgia	29.86	758.4	30.04	763.0	68	20.0	60	NW	8	3.6		0	0			0	0	Clear	
Baltimore, Maryland	29.86	758.4	29.91	759.7	61	16.1	50	NW	16	7.2		0	0			0	0	Clear	
Barnegat, New Jersey	29.80	756.9	29.82	757.4	61	16.1	66	NW	20	8.9		0	0			0	0	Clear	
Bismarck, Dakota	28.26	717.8	29.92	760.0	52	11.1	72	NW	3	1.3		Haze	5s		NW	0	0	Fair	
Boise City, Idaho	27.28	692.9	29.86	758.4	57	13.9	57	S	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.49	749.0	29.64	752.8	60	15.6	76	W	7	3.1		2cs	Sm'e	SW		0.23	5.8	Fair	
Brackettville, Texas	28.80	731.5	29.78	756.4	75	23.9	81	E	4	1.8		10c	0	Calm		0	0	Cloudy	
Breckenridge, Minnesota	28.99	736.3	30.00	762.0	42	5.6	83	SW	6	2.7		0	1ks		Calm	0	0	Clear	
Brownsville, Texas	29.89	759.2	29.95	760.7	78	25.6	86	Calm	0	0		2c	2ks;sm'	Calm	S	0.19	4.8	Fair	
Buffalo, New York	29.16	740.7	29.86	758.4	50	10.0	86	NW	7	3.1		5c	0	NW		0.08	2.0	Fair	
Burlington, Vermont	29.45	748.3	29.72	754.9	55	12.8	93	Calm	0	0			10n		Calm	0.42	10.7	Light rain	
Cairo, Illinois	29.75	755.6	30.14	765.5	64	17.8	67	N	2	0.9		5c	0	Calm		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.70	678.2	30.20	767.1	73	22.8	63	NW				0	8s		W	0.05	1.3	Fair	
Campo, California	27.32	693.9	29.89	759.2	48	8.9	64	NE	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.83	757.7	29.84	757.9	72	22.2	90	NW	10	4.5		5k	0	NW		0.39	9.9	Fair	
Cape Henry, Virginia	29.85	758.2	29.87	758.7	69	20.6	61	NW	16	7.2		0	0			0.11	2.8	Clear	
Cape Lookout, N. Carolina	29.92	760.0	29.94	760.5	71	21.7	75	N	9	4.0		5k	0	N		0	0	Fair	
Cape May, New Jersey	29.83	757.7	29.86	758.4	63	17.2	61	NW	36	16.1		2k	0	NW		0	0	Fair	
Charleston, South Carolina	29.94	760.5	30.00	762.0	71	21.7	57	N	8	3.6		8c;cs	0	W		0	0	Fair	
Cheyenne, Wyoming	24.15	613.4	30.09	764.3	51	10.6	86	S	2	0.9			Fog		Calm	0.75	19.1	Foggy	
Chicago, Illinois	29.33	745.0	30.02	762.5	54	12.2	73	W	4	1.8		0	0			0	0	Clear	
Cincinnati, Ohio	29.39	746.5	30.03	762.7	57	13.9	69	W	1	0.4		5cs	Fg'sm'	N	Calm	Inap.	Inap.	Fair	
Cleveland, Ohio	29.26	743.2	29.97	761.2	56	13.3	56	NW	8	3.6		2k	0	NW		1.40	35.6	Clear	
Concho, Texas	28.13	714.5	29.75	755.6	70	21.1	90	E	2	0.9		8c		E		1.34	34.0	Fair	
Corsicana, Texas	29.50	749.3	29.95	760.7	70	21.1	100	NE	5	2.2			10n		Calm	0.19	4.8	Light rain	
Davenport, Iowa	29.45	748.0	30.00	764.3	53	11.7	79	NW	1	0.4		0	0			0	0	Clear	
Denison, Texas	29.23	742.4	30.01	762.2	66	18.9	89	NE	3	1.3		10k	0	N		0.26	6.6	Cloudy	
Denver, Colorado	24.90	632.4	30.23	767.8	50	10.0	93	N	4	1.8			10s		N	0.02	0.5	Cloudy	
Detroit, Michigan	29.29	744.0	29.95	760.7	50	10.0	86	W	9	4.0		0	5ks		W	Inap.	Inap.	Fair	
Dodge City, Kansas	27.54	699.5	29.84	757.9	50	10.0	93	E	6	2.7			10n		E	0.24	6.1	Light rain	
Dubuque, Iowa	29.36	745.7	30.06	763.5	50	10.0	86	NW	2	0.9		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.27	743.4	29.94	760.5	58	14.4	63	N	14	6.3		0	0			0	0	Clear	
Eagle Pass, Texas	29.13	739.9	29.84	757.9	77	25.0	72	E	6	2.7		1c	0	Calm		0	0	Clear	
Eastport, Maine	29.50	749.3	29.57	751.1	57	13.9	87	NW	12	5.4			10s		W	0.05	1.3	Cloudy	
Erie, Pennsylvania	29.18	741.2	29.88	758.9	57	13.9	62	NW	18	8.0		5k	5ks	NW	NW	0.20	7.6	Cloudy	
Escanaba, Michigan	29.26	743.2	29.89	759.2	48	8.9	78	W	8	3.6		2ck	8s	W	W	0.10	2.5	Cloudy	
Florence, Arizona	28.30	718.8	29.90	759.4	90	32.2	47	Calm					10s		W	0	0	Cloudy	
Fort Bayard, New Mexico	24.11	612.4	30.11	764.8	60	15.6	82	NE	1	0.4			10s		NE	0.18	4.6	Cloudy	
Fort Craig, New Mexico	25.55	649.0			66	18.9	78	SW	4	1.8		2cs	5s	Calm	SW	0.03	0.8	Cloudy	
Fort Gibson, Indian Ter.	29.52	749.8	30.04	763.0	65	18.3	68	NE	2	0.9			10s		NW	0	0	Cloudy	
Fort Griffin, Texas	28.73	729.7	29.96	761.0	69	20.6	100	E	6	2.7			10n		Calm	0.52	13.2	Light rain	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.83	732.3	29.92	760.0	62	16.7	71	NE	9	4.0			10n		Calm	0.31	7.9	Light rain	
Fort Sully, Dakota	28.36	720.3	30.02	762.5	49	9.4	71	Calm	0	0		5c	0	Calm		0	0	Fair	
Galveston, Texas	29.94	760.5	29.98	761.5	82	27.8	78	W	3	1.3		2ck	8ks	W		0.07	1.8	Cloudy	
Grand Haven, Michigan	29.35	745.5	29.99	761.7	54	12.2	86	Calm	0	0		0	Fog		Calm	0.02	0.5	Foggy	
Indianapolis, Indiana	29.30	744.2	30.07	763.8	56	13.3	80	Calm	0	0		0	0			0	0	Clear	
Indianola, Texas	29.94	760.5	29.97	761.2	82	27.8	83	S	4	1.8		2k	2ks	S	S	0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	29.96	761.0	29.98	761.5	75	23.9	47	NW	6	2.7		0	0			0	0	Clear	
Keokuk, Iowa	29.46	748.3	30.06	763.5	62	16.7	61	Calm	6	0		5c	Haze	Calm	Calm	0	0	Fair	
Key West, Florida	29.98	761.5	30.01	762.2	84	28.9	71	NW	5	2.2		2k	0	NW		Inap.	Inap.	Clear	
Kittyhawk, North Carolina	29.90	759.4	29.93	760.2	68	20.0	79	N	16	7.2		2c	0	NW		0.05	1.3	Fair	
Knoxville, Tennessee	29.06	738.1	30.04	763.0	58	14.4	76	Calm	0	0		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.31	744.5	30.05	763.3	50	10.0	86	S	6	2.7		0	0			0	0	Clear	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	71	21.7	80	Calm	0	0			10n		Calm	0.20	5.1	Light rain	
Laredo, Texas					81	27.2	74	SE	6	2.7		5c	0	Calm		0	0	Fair	
Leavenworth, Kansas	29.27	743.4	30.10	764.5	57	13.9	93	Calm	0	0			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.61	749.5	29.84	757.9	60	15.6	76	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.54	750.3	30.09	764.3	57	13.9	80	S	1	0.4			Fog		S	0	0	Foggy	
Lynchburg, Virginia	29.30	744.2	29.96	761.0	67	19.4	50	W	4	1.8		0	0			0	0	Clear	
Maricopa Wells, Arizona					88	31.1	40	NE				8k	0	N		0	0	Fair	
Marquette, Michigan	29.17	740.9	29.86	758.4	54	12.2	68	W	12	5.4		8cs	0	Calm		0.64	16.3	Cloudy	
Mason, Texas	28.36	720.3	30.04	763.0	75	23.9	85	E	1	0.4		5c	2s	Calm		0.03	0.8	Fair	
Memphis, Tennessee	29.81	757.2	30.12	765.0	63	17.2	73	Calm	0	0			10s		NE	0	0	Cloudy	
Milwaukee, Wisconsin	29.27	746.0	30.06	763.5	52	11.1	79	W	10	4.5		0	Sm'e		W	0	0	Clear	
Mobile, Alabama	30.03	762.7	30.07	763.8	74	23.3	61	N	7	3.1		0	5s		Calm	0.15	3.8	Fair	
Montgomery, Alabama	29.86	758.4	30.09	764.3	66.5	19.2	64	N	2	0.9		5cs	Haze	W	Calm	0	0	Fair	
Morgantown, West Virginia	28.93	734.8	29.96	761.0	58	14.4	75	SW	2	0.9		0	1s		SW	Inap.	Inap.	Clear	
Mt. Washington, N. H.	23.52	597.4	29.88	758.9	38	3.3	90	W	8	3.6		8ks	8s	W	W	0	0	Threatening	
Nashville, Tennessee	29.60	751.8	30.13	765.3	61	16.1	77	NW	1	0.4		2cs	Haze	Calm	Calm	0	0	Clear	
New Haven, Connecticut	29.63	752.6	29.74	755.4	60	15.6	66	NW	8	3.6		10ck	0	NW		0	0	Cloudy	
New London, Connecticut	29.67	753.6	29.71	754.6	64	17.8	62	NW	10	4.5		0	0			0	0	Clear	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	76.5	24.7	84	NE	8	3.6		5k	4s	W	Calm	Inap.	Inap.	Cloudy	
Newport, Rhode Island	29.65	753.1	29.69	754.1	63	17.2	73	NW	8	3.6		0	0			0	0	Clear	
New York, New York	29.64	752.8	29.81	757.2	58	14.4	69	W	12	5.4		1cs	0			0	0	Clear	
Norfolk, Virginia	29.88	758.9	29.93	760.2	66	18.9	68	N	10	4.5		0	Haze		Calm	0.02	0.5	Clear	
North Platte, Nebraska	27.22	691.4	29.76	755.9	55	12.8	79	SW	10	4.5			10s		Calm	0	0	Cloudy	
Olympia, Washington Ter.	30.15	765.8	30.19	766.8	58	14.4	81	S	2	0.9			10ks		Calm	0	0	Cloudy	
Omaha, Nebraska	28.99	736.3	30.07	763.8	53	11.7	86	Calm	0	0		0	10s		Calm	0	0	Cloudy	
Oswego, New York	29.50	749.3	29.82	757.4	56	13.3	66	NW	9	4.0		5k	0	NW		1.04	26.4	Fair	
Pembina, Dakota	29.11	739.4	29.92	760.0	53	11.7	86	NW	5	2.2		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.81	757.2	29.86	758.4	59	15.0	58	NW	17	7.6		0	0			0	0	Clear	
Phœnix, Arizona					85	29.4	47	S				2k	5k	S	S	0	0	Cloudy	
Pike's Peak, Colorado	17.92	455.2	30.12	765.3	25	— 3.9	88	N	8	3.6		5c	2s	NW	Calm	0.64	16.3	Fair	
Pioche, Nevada	24.17	613.9	29.94	760.5	55	12.8	62	NW	10	4.5		0	2s		Calm	0.13	3.3	Fair	
Pittsburg, Pennsylvania	29.14	740.1	29.94	760.5	53	11.7	86	W	6	2.7		5k	0	NW		0.04	1.0	Fair	
Port Huron, Michigan	29.26	743.2	29.93	760.2	48	8.9	56	W	8	3.6		0	0			0.04	1.0	Clear	
Portland, Maine	29.58	751.3	29.63	752.6	59	15.0	76	SW	2	0.9		8k	Haze	SW		0	0	Cloudy	
Portland, Oregon	30.09	764.3	30.19	766.8	60	15.6	82	N	4	1.8			10s		Calm	0	0	Cloudy	
Prescott, Arizona					68	20.0	79	S				0	5s		SW	Inap.	Inap.	Fair	
Punta Rassa, Florida	30.02	762.5	30.03	762.7	76	25.6	77	E	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.54	750.3	29.89	759.2	73	22.8	42	NW	2	0.9		0	0			0	0	Clear	
Rochester, New York	29.22	742.2	29.82	757.4	53	11.7	79	W	9	4.0		8c;k	0	W; NW		0.28	7.1	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.60	751.8	30.17	766.3	52	11.1	90	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.80	756.9	29.88	758.9	58	14.4	72	S	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.56	750.8	30.13	765.3	58	14.4	64	NW	6	2.7		1c	0	Calm		0	0	Clear	
St. Marks, Florida	29.99	761.7	30.00	762.0	71	21.7	67	N	8	3.6		2k	0	N		0.04	1.0	Clear	
St. Paul, Minnesota	29.17	740.9	29.99	761.7	53	11.7	79	Calm	0	0		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.74	653.8	30.07	763.8	58	14.4	57	NE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.26	743.2	29.82	757.4	75	23.9	85	E	2	0.9		2c	2ks	Calm	S	0.04	1.0	Fair	
San Diego, California	29.81	757.2	29.88	758.9	66	18.9	90	SW	3	1.3			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.33	745.0	30.00	762.0	52	11.1	86	W	12	5.4		0	5ks		NW	0.08	2.0	Fair	
Sandy Hook, New Jersey	29.78	756.4	29.80	756.9	60	15.6	70	NW	27	12.1		2k	0	NW		0	0	Fair	
San Francisco, California	29.90	759.4	29.97	761.2	56	13.3	93	S	4	1.8			Fog		Calm	0	0	Foggy	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	52	11.1	86	NE	2	0.9		Haze	2s		Calm	0.02	0.5	Fair	
Savannah, Georgia	29.92	760.0	30.02	762.5	69	20.6	90	N	6	2.7		5ck	0	W		0	0	Fair	
Shreveport, Louisiana	29.82	757.4	30.04	763.0	70	21.1	85	E	8	3.6			10n		Calm	0.14	3.6	Light rain	
Smithville, North Carolina	29.94	760.5	29.98	761.5	67	19.4	64	NW	6	2.7		0	5ks		W	1.24	31.5	Fair	
Springfield, Massachusetts	29.55	750.6	29.67	753.6	59	15.0	64	NW	9	4.0			10ks		NW	0	0	Cloudy	
Stanwix, Arizona					85	29.4	67	SW				0	Haze		Calm	0	0	Clear	
Stockton, Texas					74	23.3	68	Calm	0	0			10s		S	0	0	Cloudy	
Thatcher's Island, Mass	29.58	751.3	29.63	752.6	62	16.7	83	W	4	1.8		5ck	0	SW		0	0	Fair	
Toledo, Ohio	29.33	745.0	30.00	762.0	52	11.1	86	W	3	1.3		0	8ks		W	0.01	0.3	Cloudy	
Tucson, Arizona	27.49	698.2	29.94	760.5	84	28.9	46	NW				2c	5s	W	NW	0.15	3.8	Threatening	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	72	22.2	59	NE	16	7.2		5ck	0	SW		0	0	Fair	
Umatilla, Oregon	29.74	755.4			60	15.6	70	E	4	1.8		2c	0	Calm		0	0	Clear	
Vicksburg, Mississippi	29.84	757.9	30.09	764.3	69	20.6	75	NE	4	1.8			10s		W	0	0	Cloudy	
Virginia City, Montana	24.46	621.3	29.94	760.5	45	7.2	60	SE	5	2.2			10s		Calm	0.01	0.3	Cloudy	
Visalia, California	29.55	750.6	29.92	760.0	60	15.6	55	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C.	29.82	757.4	29.94	760.5	60	15.6	61	NW	12	5.4		0	0			0	0	Clear	
Wickenburg, Arizona					70	21.1	71	W				5k	0	Calm		0	0	Fair	
Wilmington, N. Carolina	29.93	760.2	30.01	762.2	67	19.4	54	N	8	3.6		0	0			0.03	0.8	Clear	
Winnemucca, Nevada	25.77	654.6	30.13	765.3	57	13.9	25	NE	11	4.9		0	0			0	0	Clear	
Wood's Holl, Mass	29.62	752.3	29.68	753.9	68	20.0	79	NW	2	0.9		0	2s		S	0	0	Fair	
Yankton, Dakota	28.80	731.5	30.11	764.8	44	6.7	84	SW	1	0.4		8c	0	W		0	0	Fair	
Yuma, Arizona	29.65	753.1	29.80	756.9	76	24.4	55	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.82	757.4	29.87	758.7	39.5	4.2	95	N	16	7.2		4cs	0	N		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.00	762.0	30.02	762.5	83	28.3	72	NE	2.4	1.1		0	0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.19	766.8	30.20	767.1	80	26.7	82	Calm	0	0		2ck	0	Calm		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.91	759.7	29.99	761.7	84	28.9		N			1					0	0	Clear.	F. M. Everett.
Pt-a-Pitre, G'd'loupe, W. I.	29.86	758.4	29.86	758.4	84	28.9	91	E				2k	5ks	NE	E				L. V. Bigard.
Bridgetown, Barbados, W. I	30.04	763.0	30.06	763.5	82	27.8	87	E	12	5.4		5ck	5ks	E		0.80	20.3	Fair.	E. Racker.
Paramaribo, D. Guiana, S. A.			30.02	762.5	82	27.8	83	E			2	0	5k			0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.29	642.4			67.8	19.9	77	Calm			0		10n			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.09	764.3	30.11	764.8	73.5	23.1		Calm			0					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fe, 6,862.2 (?) ft., or 2,091.6 (?) m.: Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.: Denver 5.22 in.: Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.94	760.5	58	14.4	56	13.3	94	SW	14	6.3			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.28	769.1			76	24.4	77	NE	14	6.3			3			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.71	754.6	70	21 1	61	16.1	77	W					10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.89	759.2	75	23.9	74	23.3	86	ENE			2		10k;s		NE	0.46	11.7			Cloudy	
Alert, Yokohama, Japan	30.01†	762.2†	76	24.4	76	24.4	86	ENE			2		10		NE			Long	E	Misty	
Alliance, Smyrna, Turkey	30.04	763.0	84	28.9	84	28.9	59	W			3		1		Calm					Clear	
Ashuelot, Che-foo, China	30.00	762.0	76	24.4	72	22.2	80	SSW			0–1		3							D. clouds	
Canonicus, New Orleans, La.	30.06	763.5	55	12.8	77	25.0	91	NE			2		6							Partly cl'dy.	
Colorado, New York, N. Y.	29.83	757.7	61	16.1	60	15.6	82	WNW	19	8 5			3		NW	0	0			Fair	
Despatch, Beikos Bay, Bosphorus	30.09	764.3	79	26.1	77	25.0	86	N			1		0					Smooth		Clear	
Essex, N. 39° 53′, W. 42° 04′	30.23	767.8	74	23.3	74	23.3	100	Calm			0		5		E			Smooth	N&E	D. clouds	
Franklin, Norfolk, Va.	30.03	762.7	70	21.1	67	19.4	89	N	12	5.4			7		N	0	0			D. clouds	
Frolic, Rio de Janeiro, Brazil	30.45	773.4	66	18.9	67	19.4	84	S			3		1kn		S	Light	Light			D. clouds	
Gettysburg, N. 42° 55′, E. 9° 45′	29.86‡	758.4‡			80	26.7	100	SE			1		7		Calm			Moderate.	NW	Showery	
Kearsarge, N. 31° 35′, E. 128° 20′	30.06	763.5			75	23.9	??	NW			2		1		NW			Smooth		D. clouds	
Lackawana, N 47° 16′, W. 126° 08′	30.24	768.1			60	15.6	??	E			0–1		10					Moderate.	S&W	Rain & fog	
Marion, Constantinople, Turkey.	29.99	761.7	76	24.4	79	26.1	82	S			2		1		Calm	0	0	Smooth		D. clouds	
Michigan, Erie, Pa.	29.37	746 0	59	15.0	59	15.0	70	NW			4		5		W					Partly cl'dy	
Monocacy, Yokohama, Japan	29.89	759.2	76	24.4	77	25.0	100	E			1		10		E	Light	Light			D. clouds	
New Hampshire, Port Royal, S. C.	30.15	765.8			73	22.8	54	NNE	20	8.9			3		N	0	0			D. clouds	
Omaha, Mexillones, Bolivia	30.18	766.6	63	17.2	62.5	16.9	72	SSE	6	2.7			0			0	0	Smooth		Bright	
Onward, Callao, Peru	30.13†	765.3†	68	20.0	65	18.3	89	ESE			2		10					Long	W	Misty	
Ossipee, Norfolk, Va.	29.70	754.4	66	18.9	67	19.4	69	NNW			2		0							Blue sky	
Palos, Shanghai, China	29.96	761.0	77	25.0	77	25.0	77	E			3		10		E	0	0			Cloudy	
Plymouth, New York, N. Y.	30.08	764.0	63	17.2	59	15.0	100	NNW			4		1		N&W					Clear	
Ranger, N. 26° 16′, E. 119° 47′	30.12	765.0			83	28.3	87	E			0–1		3		Calm			Long	S	Clear	
Richmond, Boston, Mass.	29.77	756.1	63.5	17.5	62.5	16.9	72	WNW			2		2		WNW	Blank	Blank			D. clouds	
Rio Bravo, Brownsville, Texas	29.85	758.2			78	25.6	100	S			1		4		Calm					Blue sky	
Santee, Annapolis, Md.	29.95	760.7	65	18.3	62	16.7	61	NW			4		1		SE					Clear	
St. Louis, League Island, Pa	29.80	756.9	66	18.9	60	15.6	88	NW	15	6.7			0			0	0			Clear	
Tennessee, Yokohama, Japan	29.86	758.4	77	25.0	75	23.9	90	NNE	3	1.3			10			0.09	2.3	Smooth		Misty	
Trenton, Villefranche, France	29.95†	760.7†	84	28.9	83	28.3	64	W	11	4.9			2		W	0	0			D. clouds	
Vandalia, Beirut, Syria	29.97	761.2	84	28.9	85	29.4	61	WNW			0–1		2		W					D. clouds	
Wabash, Boston, Mass.	29.68	753.9	64	17.8	62	16.7	83	NW	5	2.2			3		NW	0.29	7.4			Hazy	
Wyoming, Washington, D. C.	30.20†	767.1†	65	18.3	63	17.2		WNW			4		0							Blue sky	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio N. 29° 06′, E. 124° 52′					82	27.8		SSW			4		3		SW	smooth	SE	Clear	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
S. S. Oceanic N. 37° 30′, E. 172° 34′			30.05†	763.3†	74	23.3		W			5		s;k		W	Long	W	Raining	Capt. W. H. Kidley.
																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 49° 38′, W. 13° 53′	W½N		30.35	770.9	70.5	21.4	46	N			1		0			smooth		Clear	Capt. A. Jaeger.
S. S. Ohio N. 48° 30′, W. 21° 9′			30.37	771.4	61.0	16.1	61	SW			3		c		SW	Long	NNE	Clearing	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 41° 05′, W. 71° 09′	N	5	29.64	752.8	67	19.4	74	WNW	13	5.8		2k	0	NW		Short		Clear	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 4, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			30.04	763.0	82.8	28.2	65	NNW			1		2			0	0	Clear	Michel.
Algiers			30.11	764.9	86.0	30.0	61	N			1		0			0	0	Clear	Peter.
La Calle			30.08	764.0	80.1	26.7	84	NE			4		7			0.039	1.0	Cloudy	Fleury.
Tunis			30.09	764.3	98.6	37.0		NE			3		1			0	0	Clear	Jacques.
Sfax			30.09	764.2	87.8	31.0		ESE			3		1			0	0	Clear	Husson.
Saida			30.00	761.9	83.1	28.4		NW			4		9			0.067	1.7	Hidden	Millot.
Tebessa			30.12	765.1	86.4	30.2		SSE			2		2			0.157	4.0	Clear	Bourgeois.
Geriville			30.03	762.7	75.9	24.4	60	NNW			2		8			0	0	Cloudy	Lemaillot
Laghouat			30.07	763.7	89.6	32.0	38	W			2		4			Inap	Inap.	Fair	Frangois.
Biskra			30.10	764.5	100.6	38.1	36	NW			1		8			0	0	Cloudy	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.43	747.6	29.98	761.5	59.4	15.2	77	NE			4		10			0.079	2.0	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.24	742.8	30.01	762.2	57.9	14.4	81	NW			3		10			0.083	2.1		Dr. Wierzbiski.
Eperies	29.06	738.2	29.92	759.9	65.1	18.4	77	Calm			0		10n			0	0		Julius Mikolik.
Gratz	28.82	731.9	30.05	763.3	58.8	14.9	84	E			3		10			0.118	3.0		Andreas Rospini.
Hermannstadt	28.48	723.4	29.88	757.7	77.7	25.4	51	WNW			1		3			0	0		Prof. Reissenberger.
Kremsmünster	28.73	729.7	30.07	763.8	54.7	12.6	75	W			3		10			0.177	4.5		Prof. C. Wagner.
Lemberg	28.91	734.4	29.87	758.6	67.8	19.9	67	NE			1		4			0.083	2.1		Dr. T. Stanecki.
Pola	29.78	756.3	29.88	759.0	81.3	27.4	62	SW			2		6cks			0.034	0.86		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin																			Karl Stancel.
Trieste	29.03	752.6	29.90	759.4	74.1	23.4	83	Calm			0		8			0	0		P. Busin.
Vienna	29.79	756.6	29.89	759.2	79.3	26.3	63	W			1		3			0.378	9.6		I. R. Central Met. Obs'y.
	29.36	745.8	30.05	763.3	58.1	14.5	80	W			1		10			0.028	0.7		

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 497.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.66	727.9	30.17	766.3	53.8	12.1	76	NNW			3		10			0.079	2.0		
Brussels	29.98	761.5	30.18	766.6	61.5	16.4	54	NW			4	1	4	WSW	NW	0.069	1.75		Royal Observatory.
Furnes																		Raining	
Maeseyck	29.99	761.8	30.12	765.1	61.9	16.6	75	NW			4		7			0.016	0.4		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	30.14	765.5	30.24	768.1	53.9	12.2		NW	7	3.1		2				0	0	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	30.27	768.8	30.26	769.1	58	14.4		W			2	5						D. clouds	William McNeil.
Armagh, Observatory			30.35	770.9	58.6	14.8		SW	3	1.3		7						D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.33	770.4	55.8	13.2		WNW	14	6.3		6						D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.38	771.6	57.8	14.3		SSW			1	9						D. clouds	J. Dreyer.
Bradford, Yorkshire	29.89	759.2	30.29	769.4	55.1	12.8		W			0	9				0.08	2.0	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.30	769.6	61.0	16.1		N			2	7						D. clouds	H. Todd. [H. C
Cardington			30.32	770.1	59.0	15.0		N			2	2						Blue sky	John McLaren.
Chatham, School M. E	30.21	767.3	30.34	770.6	59.2	15.1		NW			3	8						Blue sky	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.91	734.3	30.40	772.1	52.0	11.1		N			3	5						Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.27	768.8	30.33	769.6	55	12.8		NW			3	5						D. clouds	J. Mac Gowan.
Dover	30.14	765.5	30.17	766.3	58	14.4		N			4	5						½ clouded	J. Costello.
Eccles, (near Manchester)			30.30	769.6	58.7	14.8		NW	6.0	2.7		6						D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.17	766.3	30.40	772.1	58.2	14.6		NW			1	4						D. clouds	The Staff.
Fort Napier, (Natal)	27.93	709.4	30.17	766.3	61.3	16.3		E			3	9						Overcast	Pvt. G. Salmon, A. H C.
Free Town, (Sierra Leone)			29.94	760 5	85.0	29.4		N			1	4						D. clouds	
Galway, Queen's College			30.33	770.4	59	15.0		WSW			1	10						Raining	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.05	763.3	80.0	26.7		E			4	0						Blue sky	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	30.07	763.8	30.27	768.8	56.2	13.4		W			4	4						Blue sky	D. G. Maclean.
Great Yarmouth	30.25	768.3	30.25	768.3	52	11.1		NW			2	8						Raining	G. T. Watson.
Greenwich, Royal Obs'y	30.12	765.0	30.29	769.4	61.0	16.1		N			2	8						D. clouds	The Staff, for G. B. Airy.
Guernsey	30.13	765.3	30.35	770.9	60	15.6		NNW			1	3						D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.38	771.6	60	15.6		N			2	2c				0.4	10.	Fine	M. P. Moyle.
Holyhead	30.31	769.9	30.36	771.1	55	12.8		WNW			3	1						Blue sky	John Tilston.
Jersey	30.07	763.8	30.37	771.4	57.8	14.3		N			4	5						D. clouds	J. Fisher.
Kew, Observatory			30.31	769.9	58.8	14.9		N	13	5.8		5k						D. clouds	The Staff.
Kingstown	30.35	770.9	30.38	771.6	55	12.8		NW			3	9						Overcast	George Mitchell.
Leicester, Museum			30.31	769.9	57.1	13.9		NE			2	8						D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.95	760.7	30.02	762.5	85.4	29 7		NW			1	2						D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	30.11	764.8	30.20	767.1	57	13.9		W			2	2						¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	85.8	29.9		W			1	4						D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.13	765.3	30.32	770.1	55.7	13.2		W			1	8k;d			W	0.010	0.25	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.79	756.7	30.31	769.9	57.0	13.9		NW			3	9						D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.31	769.9	59	15.0		N			1	4						D. clouds	F. Lucas
Plymouth	30.29	769.4	30.36	771.1	57.1	13.9		NW			2	8						D. clouds	John Merrifield.
Roche's Point	30.34	770.6	30.39	771.9															W. Kennedy.
Saint Ann's Head	30.21	767.3	30.37	771.4	56	13.3		NW			1	1						Blue sky	John C. Walker.
Sandwick Manse, (Orkneys)			30.29	767.1	52	11.1		W	20	8.9		1						Blue sky	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.86	758.4	83.8	28.8		S			1	0						Blue sky	Sergt. W. H. Lyne.
Sheffield	30.07	763.8	30.31	769.9	55.8	13.2		NW			1	9				0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.26	768.6	30.30	769.6	63.6	17.6	64	W			3	7				0	0	D clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					54.4	12.4		W			3	5						D. clouds	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C., (Hebr.)			30.17	766.3	56	13.3		WSW			3	8						D. clouds	John Smith.
Stratfield Turgiss	30.11	764.8	30.32	770.1	59.0	15.0		NW			2	2						Squally	Rev. C. H. Griffith, F.M.S.
Thurso			30.17	766.3	52	11.1		W			3	7						Showery	John Trotter.
Truro, Royal Institution			30.04?	763.0?	65	18.3		NW			4	4						D. clouds	W. Newcombe.
Valencia, Observatory			30.40	772.1	57.9	14.4		NW	3	1.3		4						D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		W			3	0				0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.09	764.3	30.13	765.3	79.0	26.1	53	SSE	4	1.8		2	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.84	757.9	55.0	12.8	82	NW			1		10kn			0.01	0.3	Covered	Francis Abbott, F.R.A.S.
Leith, Restairig Park			30.28	769.1	59.0	15.0		NW			2		9k					Showery	Andrew Gibb.
Mauritius, Observatory	29.94	760.5	30.13	765.3	72.2	22.3	80	SW	8.5	3.8		4	5	Calm	WNW	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	30.12	765.0	30.21	767.3	53.7	12.1	69	N	24	10.7			10			0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.24	768.1	53	11.7		W			4	3	0	W		0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.10	764.5	51	10.6		N			4	5	5	NNW					Robert Burnet.

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

Marine Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia																			
Ship Camperdown																			Capt. J. E. Moulund.
Brig Catherine, N. 45° 50′, W. 54° 20′			29.83	757.7	63	17.2		SW			4		7			5	SW	D. clouds	Capt. A. T. Miller.
Barque Celeste																			Capt. Adam Smith.
S. S. Hibernia																			Capt. D. F. McKechnie.
Barque Maroon																			Capt. W. R. Cato
Ship Mikado																			Capt. A. T. Brown.
S. S. Seine, N. 49° 45′, W. 42° 50′			30.14	765.5	63	17.2		SW			2		10			2	SW	Foggy	Capt. C. C. Prehn.
Barque Sorata																			Capt. H. Manning.
Schooner Traveller																			Capt. Jas. J. Price.
																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.29	667.8			66.6	19.2	90	E			3		10s			Inap.	Inap.		Federico Maison.

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

DANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	29.90	759.5	29.95	760.7	57.0	13.9	85	Calm			0		2						
Fanöe	30.00	761.9	30.02	762.4	57.6	14.2	71	NNW			6		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.98	761.5	30.02	762.4	51.4	10.8	84	W			4		10						
Vestervig	29.78	756.5	29.95	760.8	55.4	13.0	73	NW			4		2						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.83	757.6	30.38	771.6	61.7	16.5	73	NW			4		10		W	0.185	4.7	Covered	Collignon, Director.
Amiens, Normal School																			Bouvarne, Director.
Avignon, Normal School	30.06	763.4	30.13	765.4	68.0	20	39	NNW			6					0	0	Light clouds	Mr. Giraud, Director.
Bar-sur-Seine	29.61	752.0	30.17	766.3	61.0	16.1	72	NNW			2		8kn		N	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	30.00	761 9	30.28	769.2	58.1	14.5	69	NW			2		8		NW	0.256	6.50	Very cloudy	Normal School.
Besançon	29.35	745.5	30.26	768.6	53.6	12	80	S			4		10		SW	0.098	2.5	Covered	Normal School.
Bourg-en-Bresse	29.34	745.1	30.27	768.8	57.7	14.3	63	N			2		10n		N	0	0	Covered	Normal School.
Bourges, Normal School	29.68	753.8	30.23	767.8	57.2	14	89	NW			3		5		N	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.10	764.6	30.32	770.2	62.1	16.7	47	N			2		4		N	0	0		The Staff.
Carcassonne, Normal School	29.85	758.1	30.26	768.6	69.4	20.8	74	E			6		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.88	759.0	30.20	767.0	60.4	15.8	75	N			3		8ks		N	0.232	5.9	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.89	733.7	30.24	768.0	60.8	16.0	49	NW			2		10		NW	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.30	744.2	30.18	766.6	60.1	15.6	87	W			2		5		W	0.28	7.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.98	736.0	30.12	765.0	65.3	18.5	31	NW			8		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.12	765.1	30.34	770.6	60.4	15.8	52	W			6		8		W	0	0	Very cloudy	Moullot, Director.
Le Mans, Normal School	30.04	763.1	30.35	770.9	58.1	14.5	68	NNE			3		8		NNE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.35	745.5	30.27	768.9	55.2	12.9	75	SW			2				SW	0.016	0.4		Pin, Director.
Lorient, Naval Observatory	30.32	770.1	30.42	772.6	63.3	17.4	32	NE			2		8		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.47	748.6	30.16	766.1	58.5	14.7	98	NW			2		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.11	739.5	30.13	765.2	58.1	14.5	83	SW			2		8		SW	0.047	1.2	Very cloudy	Normal School.
Nismes, Normal School	29.87	758.6	30.07	763.6	68.4	20.2	43	S			4		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	30.04	762.9	30.28	769.1	55.2	12.9	79	NW			2		10n		NW	0.064	1.63	Raining	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.33	770.3	30.36	771.1	65.1	18.4	64	N			1		8		N	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.21	767.2	30.29	769.4	62.8	17.1	52	NW			3		5		NW	0.354	9.0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.24	742.8	30.31	769.9	68.0	20	47	SW			1		5		W	0	0	Cloudy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0.28	7.		L'Abbé Marchésl.
Marseilles, Observatory			30.07	763.8	67.5	19.7	28	NW			6		2			0	0		The Staff.
Mont-Louis	25.04	636.0	30.35	771.0	55.6	13.1	40	WNW	7.4	3.33			4		SW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.00	761.9	30.27	768.9	55.0	12.8	81	N			3		10		NNW	0.063	1.6	Light rain	Marié Davy, Director.
Perpignan			30.22	767.6	66.0	18.9	43	N	18.6	8.33			5		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.47	545.4			37.0	2.8		W			1		8					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22 70	576.5			42 4	5.8		W			2		8			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.11	764.8	30.28	769 0	57.0	13.9	77	NNW			2		10			0.039	1.0	Raining	E. Renou.
Toulouse, Observatory	29.61	752.0	30.34	770.5	62.4	16.9	36	NNW			4		6			0	0		The Staff.
Tours	30.11	764.7	30.30	769.7	62.6	17.0	57	NW			2		10		N	0	0		C. Marquet.
Versailles, (near Paris)			30.28	769.2	56.5	13 6	86	NNW			2		10			0.093	2.35	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29 83	757.7	29.86	758.4	70.3	21.3	99	W	4.7	2.1			10n			0.110	2.8	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. T. Hoh.
Berlin	29.75	755.6	29.92	760.0	58.8	14.9	70	N			3		7			0.091	2.31		Prof. Arndt.
Breslau	29.45	747.9	29.98	761.4	58.8	14.9	54	WNW			6		8			0.022	0.56	Raining	Royal University Obs'y.
Carlsruhe	29.70	754.4	30.13	765.4	54.7	12.6	88	SW			1		10	NW		0.106	2.7	Light rain	Albert Senz.
Cassel	29.55	750.5	30.16	766.0	55.0	12.8	87	NNW			5		5	SSW		0.089	2.26		Dr. H. Möhl.
Crefeld	29.95	760.7	30.11	764.8	63.3	17.4	56	NW			3		6kn			0.47	12.		Director Lose.
Emden	30.07	763.7	30.10	764.6	62.1	16.7	46	NNW			4		3			0	0		Prof. Prestel.
Frankfort on the Main	29.77	756.2	30.14	765.5	57.7	14.3	62	NNE			1		10			0.098	2.5		Physical Society.
Friedrichshafen	28.75	730.2	30.18	766.6	57.2	14.0	60	WNW			6		4	W		0.043	1.1	Raining	M. Wilhelm.
Hamburg	29.97	761.1	30.04	762.9	60.6	15.9	55	NNW			5		6k	NW*		0	0	Fair	Captain F. Hegemann.
Kiel	29.99	761.8	30.01	762.2	59.9	15.5	59	NW			3		7			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.81	757.2	29.89	759.2	57.4	14.1	77	SE			1								Prof. E. Luther.
Köslin			29.91	759.6	57.7	14.3		Calm			0		4			0.020	0.5		H. Müller.
Leipsic, Observatory	29.60	751.7	30.01	762.3	57.2	14.0	68	SW			5		10	W		0.142	3.6	Stormy	Prof. Bruhns.
Memel, Naval School	29.90	759.4	29.95	760.6	58.6	14.8	61	NW			1		9cs						Reinbrecht von Skalweit.
Neufahrwasser	29.88	759.0	29.90	759.4	56.5	13.6	86	Calm			0		10			0.055	1.4	Light rain	A. Lothes.
Posen	29.65	753.1	29.94	760.5	61.5	16.4	51	WSW			8		10			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.61	752.2	30.16	766.0	61.2	16.2	60	S			3		9	W		0.041	1.03		Dr. Schur.
Stuttgart	29.15	740.5	30.10	764.5	58.6	14.8	57	W			3		8	W		0.016	0.4	Light rain	Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.58	726.0	30.08	764.1	55.2	12.9	57	W			4		10	W		0.173	4.4		Dr. Von Bebber.
Wustrow, Naval School	30.00	762.0	30.04	763.0	57.9	14.4	62	NE			3		3			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.56	750.8	29.90	759.5	94.6	34.8		SW										Very clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.54	750.4	29.59	751.6	81.4	27.4	83	NW	28.0?	12.5?			6		NNW	0.15	3.8	D. clouds	
Deesa																			
Bombay	29.73	755.2	29.77	756.1	81.8	27.7	85	W	4.0	1.8			10		SW	0.36	9.1	Misty	
Poona	27.70	703.7	29.70	754.3	78.3	25.7	76	NW					10		W	0.21	5.3	Raining	
Lahore	28.90	734.1	29.63	752.5	89.1	31.7	68	Calm	3.4	1.5			0			0	0	Blue sky	
Belgaum	27.28	692.8	29.82	757.5	73.4	23.0	92	W	16.0	7.2			10		W			Drizzling	
Bangalore																			
Roorkee	28.74	730.1	29.63	752.5	85.8	29.9	72	Calm	2.7	1.2			9			0.03	0.8		
Agra	29.05	737.9	29.59	751.6	94.7	34.8	45	W					7			0	0		
Trichinopoly																			
Nagpur	28.67	728.2	29.70	754.4	84.4	29.1	80	W	1.5	0.7			8					Thunder-storm	
Madras																			
Lucknow	29.24	742.8	29.60	751.9	97.1	36.2	40	W	2.5	1.1			7		NW	0	0	D. clouds	
Allahabad	29.32	744.8	29.63	752.5	90.9	32.7	74	Calm	2.0	0.9			1			0	0	D. clouds	
Patna	29.45	748.1	29.63	752.5	91.5	33.1	63	Calm	0.9	0.4			10			0	0	Overcast	
Hazaribagh	27.68	703.1	29.66	753.3	84.8	29.3	67	NW	5.3	2.4			4			0	0		
Cuttack	29.59	751.7	29.67	753.7	87.3	30.7	74	ENE	1.7	0.8			4			0	0	D. clouds	
Calcutta (Alipore)	29.66	753.5	29.69	754.0	85.7	29.8	88	WNW					1	W		0	0	Blue sky	
Goalpara	29.35	745.4	29.73	755.1	87.8	31.0	72	Calm	0.6	0.3			4		W	0	0	D. clouds	
Chittagong	29.63	752.5	29.72	754.8	85.4	29.7	85	WNW	2.7	1.2			3			0	0	Blue sky	
Sibsagar	29.36	745.6	29.69	754.1	84.2	29.0	87	ESE	2.2	1.0			8	SW		0	0	D. clouds	
Rangoon																			
Jubbulpore	28.36	720.2	29.70	754.4	86.0	30.0	67	NW	3.8	1.7			2	NW		0	0	D. clouds	

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

ITALIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.24	564.9	29.86	758.5	47.3	8.5	47	W			4		2	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.20	563.8	29.82	757.3	44.2	6.8		NNE			2		7	NW		0	0		Signora Ernesta Manfredi.
Udine	29.47	748.6	29.87	758.7	73.4	23.0	57	SW	7.4	3.3			4			1.063	27.0		Prof. Giovanni Clodig.
Padua	29.73	755.2	29.84	757.9	79.0	26.1	34	S	6.3	2.8			2			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.65	753.0	29.83	757.7	80.8	27.1	41	W	2.5	1.1			2	W		0.020	0.5		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.57	725.7	29.84	758.0	76.6	24.8	75	NNE			1		5			0	0		Prof. Trionfini Carlo.
Domodossola	28.88	733.5	29.87	758.6	76.5	24.7	15	N			4		1			0	0		Prof. Giuseppe Calza.
Milan	29.35	745.6	29.85	758.1	82.0	27.8	42	N			1		2	NW		0	0		Ab. Gio. Capelli.
Pavia	29.53	750.1	29.86	758.5	78.1	25.6	24	NW			1		1			0	0		Prof. Gio. Cantoni.
Moncalieri	28.99	736.4	29.86	758.5	78.8	26.0	18	N	0	0			1			0	0		Prof. P. F. Denza.
Mondovi	28.02	711.6	29.85	758.1	74.8	23.8	29	N			4		2	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.69	754.2	29.91	759.6	73.9	23.3	58	E			8		2	W		0	0		Prof. L. Vassallo.
Genoa	29.75	755.6	29.91	759.7	78.1	25.6	44	SE	9.8	4.4			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.61	752.1	29.85	758.2	78.6	25.9	45	NW			6		2			0	0		Dott. G. Manzi.
Parma	29.54	750.2	29.84	757.9	81.3	27.4	59	SW			2		3			0	0		Prof. P. Pigorini.
Florence	29.71	754.7	29.96	760.9	78.3	25.7	37	SW			4		9	SW		0	0		Cav. F. Meucci.
Leghorn	29.85	758.3	29.94	760.4	75.0	23.9	60	W	18.6	8.3			3			0	0		Prof. P. Monte.
Siena	28.76	730.6	29.93	760.2	72.9	22.7	50	NNW	5.6	2.5			7	W		0.004	0.1		Prof. L. Toscani.
Urbino	28.41	721.5	29.90	759.4	78.8	26.0	47	WSW			4		8			0	0		Prof. P. Serpieri.
Pesaro	29.84	758.0	29.89	759.2	80.4	26.9	65	N	9.8	4.4			6	SW		0	0		Prof. Luigi Guidi.
Ancona	29.78	756.3	29.88	758.9	81.0	27.2	58	SE			4		10	W		0	0		Prof. F. DeBosis.
Grosseto	29.85	758.1	29.95	760.8	86.7	30.4	43	S			2		3	SW		0	0		Avv. P. Ponticelli.
Rome	29.82	757.5	29.99	761.8	83.1	28.4	43	SW	13.0	5.8			9			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.83	757.7	30.02	762.6	83.5	28.6	56	WSW			6		10	SW		0	0		Prof. L. Palmieri.
Lecce	29.73	755.2	29.97	761.3	87.8	31.0	44	NE	6.3	2.8			6			0	0		Prof. C. DeGiorgi.
Cosenza	29.18	741.2	30.01	762.3	91.4	33.0	38	NNW	0.7	0.3			0			0	0		Prof. F. D. Conti.
Cagliari	29.78	756.3	29.96	760.9	88.1	28.4	39	NW			4		8	W		0.020	0.5		Prof. A. Pacinotti.
Rinosto, (Sicily)	29.88	759.0	29.93	760.2	84.6	29.2	74	NE			2		0			0	0		Prof. F. Cafiero.
Palermo	29.72	755.0	29.97	761.1	84.2	29.0	67	ENE	4.3	1.9			8			0	0		Prof. G. Cacciatore.
Caltanissetta	28.11	713.9	29.95	760.6	86.5	30.3	27	SW			2		0			0	0		Prof. A. Pagani.
Syracuse	29.85	758.3	29.93	760.2	89.2	31.8	52	W			2		1	ESE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.49	749.0	30.04	763.1	80.6	27.0	63	SW	1.3	0.6			8	SW		0	0		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.59	751.6	29.67	753.5	71.5	21.9	95	NE	8	3.6			10n			0.875	22.23	Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mexico, Central Obs'y	23.07	585.9	30.05	763.2	57.2	14.0	88	NW	1.0	0.46		0	5k		NE	0	0	Cloudy	Mariano Bárcena Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Flushing	30.22	767.6	30.22	767.6	62.4	16.9		NNW			4					0.709	18.0		
Groningen	30.06	763.5	30.11	764.9	58.5	14.7		N			2					0.169	4.3		
Helder	30.11	764.9	30.11	764.9	59.2	15.1		N			4					0	0		
Utrecht	30.13	765.3	30.18	766.5	59.9	15.5	71	NNW			2		8			0.142	3.6	Very cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.96	760.9	30.01	762.3	51.8	11.0	70	NNW	13.2	5.9			3			0	0		
Brönö	29.84	758.0	29.88	759.0	48.2	9.0	73	W	9	4			10					Light rain	
Christiania	29.78	756.3	29.92	760.0	58.0	14.8	72	NNW	0	0			9			0.106	2.7		
Tromsö	29.71	754.7	29.76	755.8	47.8	8.8	66	SW	4	2			9			0.004	0.1		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra, (Azores)	30.02	762.5	30.21	767.3	70.3	21.3	87	E	3.1	1.4			6			0	0		Dr. J. A. Sampaio
Campo Major	29.06	738.0	30.02	762.6	85.1	29.5	30	ESE	4.3	1.9			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.7	30.15	765.9	76.3	24.6	70	SSE	3.1	1.4			9			0.098	2.5		Capt. D. A. de Cunha.
Lisbon, Observatory	29.71	754.7	30.07	763.7	72.7	22.6	59	SSW	9.8	4.4			1			0	0		The Staff.
Ponta Delgada, (Azores)	30.11	764.9	30.19	766.7	75.6	24.2	69	WSW	1.3	0.6			3			0.020	0.5		

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

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

RUSSIAN SERIES.

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

Warsaw	29.50	749.2	29.91	759.8	59.9	15.5	69	WSW	16	7			10						Astronomical Obs.
Wilna	29.55	750.5	29.96	760.9	62.6	17.0	54	S	4	2			9						Astronomical Obs.
Dorpat	29.65	753.2	29.89	759.3	55.4	13.0	83	W	4	2			6						Physical Cabinet.
St. Petersburg	29.83	757.6	29.84	758.0	54.0	12.2	67	NW	9	4			5						Central Physical Obs
Kuopio	29.58	751.3	29.90	759.5	52.7	11.5	78	N	7	3			3					Raining	Ch. Forsten.
Kieff	29.29	743.9	29.91	759.7	61.0	16.1	84	NNE	4	2			10						Physical Cabinet.
Nikolaiev	29.80	757.0	29.87	758.8	74.8	23.8	81	Calm	0	0			9						Kurdakof.
Kertch	29.89	759.3	29.91	759.8	80.1	26.7	61	S	4	2			6						Lagorio.
Moscow	29.45	747.9	29.98	761.5	62.2	16.8	63	SE	9	4			3						Meteorological Obs.
Lugan	29.61	752.0	29.80	757.0	74.3	23.5	54	NE	4	2			10			Blank	Blank		Meteorological Obs.
Archangel	29.54	750.3	29.56	750.8	51.6	10.9	96	W	18	8			10						Ogorodnikof.
Tiflis	28.53	724.6	29.85	758.3	89.4	31.9	37	Calm	0	0			1						Physical Observatory.
Astrakhan	29.95	760.6	29.86	758.5	83.3	28.5	52	ENE	7	3			0						Sebastianof.
Kasan	29.70	754.3	29.96	761.0	64.0	17.8	42	SW	7	3			3						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	28.94	735.0	29.87	758.7	57.2	14.0	49	WSW	18	8			3						Meteorological Obs.
Nukuss	29.71	754.5	29.93	760.2	80.8	27.1	43	NNE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.28	718.3	29.91	759.8	75.2	24.0	73	Calm	0	0			0						Michelson.
Barnaul	29.45	748.1	29.96	761.0	65.1	18.4	53	SW	9	4			10						Meteorological Obs.
Yeniseisk	29.61	752.0	29.75	755.7	56.1	13.4	94	SE	2	1			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	28.64	752.8	29.78	756.4	77.4	25.2	64	Calm	0	0			0					Lightning	Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					43.2	6.2	93	Calm	0	0			0						

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.92	709.2			75.2	24.0	44	NE	7.4	3.3		4	2	SSW		0	0	Partly cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.4	30.06	763.5	79.6	26.4	80	ESE	2.2	1.0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.99	761.7	30.08	764.1	78.4	25.8	66	SSW	14.3	6.4		0	1		SW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.93	760.2	81.7	27.6	89	SSW				1s	1k			0.039	1.00	Clear	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Haparanda	29.80	756.8	29.84	757.8	52.9	11.6	80	S			4		8			0	0		
Umea	29.75	755.7	29.80	757.0	58.6	14.8	64	SW			2		7			0	0		
Hernosand	29.77	756.2	29.82	757.5	61.5	16.4	58	WSW			2		5			0.008	2.5	Raining	
Stockholm	29.68	753.8	29.85	758.3	59.4	15.2	62	W			2		4			0.039	1.0		
Wisby	29.85	758.1	29.91	759.6	54.7	12.6	85	NW			4		5			0	0		
Sub-Series.																			
Upsala	29.78	756.4	29.85	758.3	56.7	13.7	74	SW	4.7	2.1			5		WNW	0.049	1.25		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.78	731.1	30.19	766.7	62.1	16.7	51	Var.					2			0	0	Clear	The Observatory.
Zurich	28.57	725.6	30.20	767.1	55.4	13.0	72	W			2		8			0	0	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +3.7 mm; Thermometer, —3.0 cent.; Relative Humidity, —9 per cent.

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

TURKISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.92	760.0	84.0	28.9	49	SE	3.	1.5			0			0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.99	761.8	93.7	34.3		SE			1		0						B. Stéfanidès.
Valona			30.12	765.1	86.4	30.2		NW			1		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			29.80	757.0	87.8	31.0		SE			3		8						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.74	755.4	29.85	758.3	84.9	29.4	60	NW			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B	29.54	750.3	29.62	752.3	56.9	13.8	68	NW	16	7.2			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			29.88	758.9	56	13.3		W	5	2.2		0	2s		W	0.03	0.8	Fair	W. R. Bigg.
*Chatham, N. B			29.63	752.6	53	11.7	79	SW	16	7.2		2k	0	W		0.88	22.4	Fair	G. A. Blair.
Charlottetown, P. E. Island			29.73	755.1	57	13.9	75	SW	18	8.0		5k	0			0.290	7.37	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.64	752.8	29.83	757.7	58.6	14.9	78	NW			3	0	1s			0	0	Fair	James Smith, M. A.
Dalhousie, N. B	29.63	752.6	29.66	753.4	51.8	11.0	75	W			4					0.27	6.9	Clearing	H. A. Johnson.
Esquimault, B. C	29.98	761.5	30.03	762.7	52.3	11.3	100	Calm				0	0			0	0	Hazy	W. H. Bevis.
*Father Point, Quebec			29.55	750.6	51	10.6	89	SW	48	21.5		5k	5n	W	W	0.10	2.5	Light rain	J. McWilliams.
Fredericton, N. B	29.71	754.6	29.78	756.4	54.7	12.6	70	W	8	3.6		8ck	0	W		0.03	0.8	Fair	Prof. Harrison.
*Fort Garry, Manitoba			30.06	763.5	41	5.0	95	N	6	2.7		0	2s		Calm	0	0	Fair	James Stewart.
Goderich, Ontario	29.16	740.7	29.92	760.0	64.7	18.2	75	SW			1	0	0			Inap	Inap.	Clear	H. J. Strang, M. A.
Granton, Ontario	28.86	733.0	29.95	760.7	55	12.8	81	SW			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S	29.66	753.4	29.70	756.7	59	15.0	71	SW	15	6.7		2c	2ks		W	0.191	4.86	Fair	F. Allison, M. A.
Hamilton, Ontario	29.60	751.8	29.96	761.0	59.7	15.4	68	NW			2	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.71	754.6	29.74	755.4	66	18.9	94	SW			4		10n			0.80	7.6	Overcast	E. Weedon.
*Kingston, Ontario	29.56	750.8	29.92	760.0	60	15.6	86	W	8	3.6		5k	2s	W	W	0.03	0.8	Cloudy	S. Woods, M. A
*Montreal, Quebec	29.62	752.3	29.82	757.4	55	12.8	84	W	8	3.6		2cs	2ks	W		0.03	0.8	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.19	741.4	29.87	758.7	56	13.3	95	Calm	0	0		2ck	5ks	W	W	0.10	2.5	Fair	Rev. R Mosley
Peterboro, Ontario	29.15	740.4	29.88	758.9	59.7	15.4	48	W			1	4k	0			0.08	2.0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.28	743.7	29.96	761.0	59	15.0	65	W	11	4.9		0	0			0	0	Clear	H Morgan.
Port Hastings, N. S	29.72	754.9	29.77	756.1	58.5	14.7		W	8	3.6						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.33	745.0	29.97	761.2	59	15.0	77	W	6	2.7		2k	0	W		0	0	Clear	M. Payne.
*Quebec, Quebec	29.44	747.8	29.75	755.6	54	12.2	74	W	25	11.2		0	0			0.21	5.3	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.39	746.5	29.84	757.9	56	13.3	78	NW	4	1.8		5ck	0	NW		0.04	1.0	Fair	W. H. McIntyre.
St. John, N. B	29.64	752.8	29.80	756.9	52	11.1	86	S	2	0.9		9k	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.18	741.2	29.86	758.4	64	17.8	66	SW	3	1.3		0	0			Inap.	Inap.	Clear	K. Stewart.
Stayner, Ontario			29.86	758.4	62	16.7	82	Calm	0	0		0	0			0.21	5.3	Clear	R. J. Cole
Stratford, Ontario	28.67	728.2	29.94	760.5	53.2	11.8	85	SW	7	3.1		0	0			0	0	Clear	C. H. MacGregor, M. A.
*Sydney, C. B	29.75	755.6	29.78	756.4	65	18.3	67	SW	15	6.7		0	2ks		SW	0.33	8.4	Clear	T. C. Hill.
*Toronto, Ontario	29.56	750.8	29.93	760.2	58	14.4	81	W	9	4.0		5c	0	W		0.02	0.5	Fair	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					70.0	21.1	95	SW				10k	10s			0.11	2.8	Cloudy	John Delany

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

1877.—September 4.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Albany, New York	29.68	753.9	29.90	759.4	59	15.0	76	NW	1	0.4		2k	Haze	NW	Calm	0.02	0.5	Fair	
Alpena, Michigan	29.20	741.7	29.83	757.7	55	12.8	80	W	3	1.3		0	0			0	0	Clear	
Atlantic City, New Jersey	30.07	763.8	30.09	764.3	63	17.2	67	W	10	4.5		0	0			0	0	Clear	
Augusta, Georgia	29.92	760.0	30.10	764.5	69	20.6	75	S	2	0.9			10s		Calm	0	0	Cloudy	
Baltimore, Maryland	30.05	763.3	30.10	764.5	62	16.7	61	NW	3	1.3		Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	30.04	763.0	30.07	763.8	65	18.3	58	W	12	5.4		0	0			0	0	Clear	
Bismarck, Dakota	28.22	716.8	29.85	758.2	58	14.4	87	NE	6	2.7			10s		E	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.19	690.6	29.76	755.9	55	12.8	62	W	1	0.4		1c	0	Calm		0	0	Clear	
Boston, Massachusetts	29.76	755.9	29.92	760.0	61	16.1	60	SW	9	4.0		1cs	0			0	0	Clear	
Brackettville, Texas	28.73	729.7	29.72	754.9	75	23.9	68	Calm	0	0		5c	0	Calm		0	0	Fair	
Breckenridge, Minnesota	28.92	734.6	29.90	759.4	55	12.8	100	N	11	4.9		0	8s		N	0.01	0.3	Cloudy	
Brownsville, Texas	29.81	757.2	29.87	758.7	80	26.7	82	S	3	1.3		0	0			0	0	Clear	
Buffalo, New York	29.25	742.9	29.93	760.2	64	17.8	72	W	10	4.5		0	8s		SW	0	0	Fair	
Burlington, Vermont	29.60	751.8	29.85	758.2	60	15.6	70	W	7	3.1		0	8ks		W	Inap.	Inap.	Fair	
Cairo, Illinois	29.70	754.4	30.09	764.3	64	17.8	78	NE	3	1.3			10s		Calm	0	0	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.74	679.2	30.24	768.1	65	18.3	73	N				0	0			0	0	Clear	
Campo, California	27.27	692.6	29.84	757.9	51	10.6	71	NE	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.05	763.3	30.06	763.5	72	22.2	50	NE	3	1.3		5k	0	SW		0	0	Fair	
Cape Henry, Virginia	30.06	763.5	30.08	764.0	70	21.1	52	N	6	2.7		5cs	0	SW		0	0	Fair	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	72	22.2	66	N	7	3.1		5c;k	5ks	NW; SE	Calm	0	0	Cloudy	
Cape May, New Jersey	30.08	764.0	30.10	764.5	66	18.9	59	W	20	8.9		0	0			0	0	Clear	
Charleston, South Carolina	30.05	763.3	30.12	765.0	73	22.8	68	N	6	2.7		5cs	5s	W	W	0	0	Cloudy	
Cheyenne, Wyoming	24.12	612.6	30.06	763.5	48	8.9	92	NE	4	1.8		5ck	5s	W	Calm	0.27	6.9	Cloudy	
Chicago, Illinois	29.27	743.4	29.95	760.7	56	13.3	87	SW	7	3.1		0	0			0	0	Clear	
Cincinnati, Ohio	29.37	746.0	30.01	762.2	58	14.4	76	SE	2	0.9		0	Fog		Calm	0	0	Clear	
Cleveland, Ohio	29.31	744.5	30.02	762.5	60	15.6	65	E	12	5.4		0	0			0	0	Clear	
Concho, Texas	28.05	712.5	29.67	753.6	68	20.0	94	NW	6	2.7		8cs		NW		0.95	24.1	Cloudy	
Corsicana, Texas	29.44	747.8	29.89	759.2	68	20.0	94	NE	3	1.3			10s		Calm	0.89	22.6	Cloudy	
Davenport, Iowa	29.37	746.0	30.00	762.0	57	13.9	81	SW	2	0.9		5c	0	Calm		0	0	Clear	
Denison, Texas	29.16	740.7	29.94	760.5	65	18.3	94	NE	5	2.2			10s*		E	0.84	21.3	Threatening	
Denver, Colorado	24.85	631.2	30.17	766.3	50	10.0	86	NE	4	1.8		0	5s		Calm	0.06	1.5	Fair	
Detroit, Michigan	29.28	743.7	29.94	760.5	56	13.3	74	W	5	2.2		Haze	Haze	Calm	Calm	0	0	Hazy	
Dodge City, Kansas	27.44	697.0	29.70	754.4	56	13.3	87	E	1	0.4			10s		Calm	0.03	0.8	Cloudy	
Dubuque, Iowa	29.26	743.2	29.95	760.7	57	13.9	69	SW	4	1.8		2c	0	Calm		0	0	Clear	
Duluth, Minnesota	29.11	739.4	29.85	758.2	62	16.7	77	NE	6	2.7			10s		NW	0	0	Cloudy	
Eagle Pass, Texas	29.04	737.6	29.74	755.4	78	25.6	69	SE	2	0.9		1c	0	Calm		0	0	Clear	
Eastport, Maine	29.73	755.1	29.80	756.9	55	12.8	74	SW	8	3.6		8k	0	W		Inap.	Inap.	Fair	
Erie, Pennsylvania	29.27	743.4	29.97	761.2	59	15.0	76	S	12	5.4		0	0			0	0	Clear	
Escanaba, Michigan	29.18	741.2	29.80	756.9	57	13.9	75	Calm	0	0		5ck	0	Calm		0	0	Fair	
Florence, Arizona	28.31	719.1	29.91	759.7	77	25.0	59	N				0	0			0.04	1.0	Clear	
Fort Bayard, New Mexico	24.04	610.6	30.04	763.0	57	13.9	74	W	4	1.8		0	5s		W	0.03	0.8	Fair	
Fort Craig, New Mexico	25.50	647.7			61	16.1	88	NW	4	1.8		0	5s		N	0.52	13.2	Fair	
Fort Gibson, Indian Ter	29.44	747.8	29.97	761.2	64	17.8	83	E	4	1.8			10s		E	0.01	0.3	Cloudy	
Fort Griffin, Texas	28.67	728.2	29.91	759.7	64	17.8	100	N	7	3.1			10n		Calm	1.89	48.0	Light rain	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.78	731.0	29.88	758.9	56	13.3	93	N	12	5.4			10n		NE	0.44	11.2	Light rain	
Fort Sully, Dakota	28.26	717.8	29.88	758.9	60	15.6	55	Calm	0	0			Sm'e			0	0	Smoky	
Galveston, Texas	29.87	758.7	29.91	759.7	83	28.3	74	S	6	2.7		5c;k	0	Calm; S		0.05	1.3	Fair	
Grand Haven, Michigan	29.27	743.4	29.89	759.2	65	18.3	73	SW	8	3.6		0	0			0	0	Clear	
Indianapolis, Indiana	29.27	743.4	30.04	763.0	58	14.4	81	Calm	0	0		1c	Sm'e	W		0	0	Clear	
Indianola, Texas	29.88	758.9	29.91	759.7	84	28.9	79	S	17	7.6		5c	2k	W	S	0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.03	762.7	30.06	763.5	75	23.9	76	NE	3	1.3		Haze	0	NE		0	0	Fair	
Keokuk, Iowa	29.37	746.0	29.97	761.2	64	17.8	73	W	3	1.3		5ck	0	W		0	0	Fair	
Key West, Florida	29.99	761.7	30.02	762.5	84.5	29.2	69	Calm	0	0		2c	0	NE		0	0	Fair	
Kittyhawk, North Carolina	30.10	764.5	30.13	765.3	68	20.0	79	N	12	5.4		5c	0	W		0	0	Fair	
Knoxville, Tennessee	29.11	739.4	30.11	764.8	58	14.4	76	N	2	0.9		9ck	0	NW		0	0	Cloudy	
La Crosse, Wisconsin	29.19	741.4	29.91	759.7	56	13.3	74	Calm	0	0		0	0			0	0	Clear	
La Mesilla, New Mexico	25.98	659.9	30.13	765.3	65	18.3	83	Calm	0	0			10s		Calm	0.03	0.8	Cloudy	
Laredo, Texas					81	27.2	70	SE	6	2.7		0	0			0	0	Clear	
Leavenworth, Kansas	29.17	740.9	30.00	762.0	54	12.2	86	S	2	0.9		5c	0	W		0	0	Fair	
Los Angeles, California	29.51	749.5	29.84	757.9	64	17.8	88	S	3	1.3			Fog		SE	0	0	Foggy	
Louisville, Kentucky	29.51	749.5	30.06	763.5	61	16.1	82	W	1	0.4		0	Fog		Calm	0	0	Foggy	
Lynchburg, Virginia	29.46	748.3	30.13	765.3	62	16.7	61	W	4	1.8		5c	0	W		0	0	Fair	
Maricopa Wells, Arizona					69	20.6	90	N				0	2s		S	0.71	18.0	Fair	
Marquette, Michigan	29.16	740.7	29.84	757.9	56	13.3	87	NW	8	3.6			10s		Calm	0	0	Cloudy	
Mason, Texas	28.40	721.3	30.12	765.0	72	22.2	95	NW	1	0.4			10s			0	0	Cloudy	
Memphis, Tennessee	29.73	755.1	30.04	763.0	66	18.9	73	E	6	2.7			10s		SW	0	0	Cloudy	
Milwaukee, Wisconsin	29.28	743.7	29.94	760.5	59	15.0	70	W	10	4.5		0	Sm'e			0	0	Clear	
Mobile, Alabama	29.98	761.5	30.02	762.5	77	25.0	69	N	4	1.8			10s		Calm	0	0	Cloudy	
Montgomery, Alabama	29.84	757.9	30.07	763.8	71	21.7	55	NE	2	0.9		10cs	0	W		0	0	Cloudy	
Morgantown, West Virginia	29.05	737.9	30.10	764.5	59	15.0	70	Calm	0	0		0	Haze			0	0	Clear	
Mt. Washington, N. H.	23.62	599.9	29.98	761.5	33	0.6	100	NW	50	22.4			10n		NW	1.05	26.7	Light rain	
Nashville, Tennessee	29.54	750.3	30.06	763.5	65	18.3	78	NW	2	0.9		5ck	2ks	SW	Calm	0	0	Fair	
New Haven, Connecticut	29.86	758.4	29.97	761.2	66	18.9	73	W	8	3.6		0	Haze		Calm	0	0	Clear	
New London, Connecticut	29.94	760.5	29.98	761.5	66	18.9	59	W	8	3.6		0	0			0	0	Clear	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	78	25.6	86	S	4	1.8		5c	2s	Calm	Calm	0.58	14.7	Fair	
Newport, Rhode Island	29.93	760.2	29.98	761.5	62	16.7	61	SW	12	5.4		0	0			0	0	Clear	
New York, New York	29.85	758.2	30.03	762.7	60	15.6	66	W	15	6.7		2ck	0	W		0	0	Clear	
Norfolk, Virginia	30.07	763.8	30.13	765.3	67	19.4	64	N	3	1.3		5c	0	Calm		0	0	Fair	
North Platte, Nebraska	27.10	688.3	29.64	752.8	51	10.6	86	W	4	1.8		10k	0	W		0	0	Cloudy	
Olympia, Washington Ter.	29.99	761.7	30.03	762.7	51	10.6	93	S	2	0.9			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	28.87	733.3	29.99	761.7	58	14.4	75	SW	4	1.8		5ck	2s	SW	Calm	0	0	Fair	
Oswego, New York	29.60	751.8	29.91	759.7	64	17.8	72	NW	11	4.9			10s		NW	0.35	8.9	Cloudy	
Pembina, Dakota	29.22	742.2	30.06	763.5	40	4.4	91	NW	6	2.7		0	0			0	0	Clear	
Philadelphia, Pennsylvania	30.03	762.7	30.08	764.0	60	15.6	65	W	7	3.1		0	Sm'e		Calm	0	0	Clear	
Phœnix, Arizona					71	21.7	71	Calm				1k	0	NE		0	0	Clear	
Pike's Peak, Colorado	17.86	453.6	30.07	763.8	21.5	— 5.8	100	NW	13	5.8		0	2s		NW	0.36	9.1	Clear	
Pioche, Nevada	24.12	612.6	29.89	759.2	53	11.7	31	NW	4	1.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.04	763.0	56	13.3	80	W	2	0.9		0	0			0	0	Clear	
Port Huron, Michigan	29.26	743.2	29.92	760.0	55	12.8	80	SW	7	3.1		0	0			0	0	Clear	
Portland, Maine	29.79	756.7	29.84	757.9	58	14.4	69	SW	12	5.4		1k	0	Calm		0	0	Clear	
Portland, Oregon	30.00	762.0	30.10	764.5	59	15.0	94	N	1	0.4			10s		Calm	0	0	Cloudy	
Prescott, Arizona					65	18.3	45	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	82	27.8	78	E	4	1.8		0	0			0	0	Clear	
Red Bluff, California	29.44	747.8	29.78	756.4	71	21.7	41	NW	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.31	744.5	29.91	759.7	60	15.6	76	W	6	2.7		5k	0	NW		0.04	1.0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.06	763.5	52.5	11.4	93	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.71	754.6	29.79	756.7	64	17.8	58	S	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.49	749.0	30.05	763.3	59	15.0	76	SW	4	1.8			Fog		Calm	0	0	Foggy	
St. Marks, Florida	30.04	763.0	30.05	763.3	70	21.1	90	E	3	1.3		5c	0	Calm		0	0	Fair	
St. Paul, Minnesota	29.01	736.8	29.80	756.9	61	16.1	66	Calm	0	0		2c	0	Calm		0	0	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.68	652.3	30.01	762.2	57	13.9	46	E	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.15	740.4	29.71	754.6	78	25.6	81	SE	2	0.9		2c	8ks	Calm	S	0	0	Cloudy	
San Diego, California	29.80	756.9	29.87	758.7	64	17.8	83	S	7	3.1			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.35	745.5	30.01	762.2	57	13.9	75	SW	12	5.4		0	Haze		Calm	0	0	Clear	
Sandy Hook, New Jersey	30.02	762.5	30.04	763.0	63	17.2	67	W	23	10.3		2ck	0	W		0	0	Fair	
San Francisco, California	29.79	756.7	29.85	758.2	54	12.2	86	SW	16	7.2		0	0			0	0	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	51.5	10.8	96	Calm	0	0			10s		SW	0.16	4.1	Foggy	
Savannah, Georgia	30.01	762.2	30.11	764.8	72	22.2	80	NW	2	0.9		2c	8ck	W	W	0	0	Cloudy	
Shreveport, Louisiana	29.72	754.9	29.93	760.2	66	18.9	100	N	4	1.8			10n		Calm	7.00	177.8	Light rain	
Smithville, North Carolina	30.09	764.3	30.13	765.3	67	19.4	64	N	6	2.7		10cs	0	W		0	0	Cloudy	
Springfield, Massachusetts	29.76	755.9	29.89	759.2	61	16.1	66	S	6	2.7		0	0			0	0	Clear	
Stanwix, Arizona					74	23.3	76	NE				0	0			0.20	5.1	Clear	
Stockton, Texas					67	19.4	90	Calm	0	0			10s		SW	1.34	34.0	Cloudy	
Thatcher's Island, Mass	29.85	758.2	29.90	759.4	61	16.1	66	W	20	8.9		0	0			0	0	Clear	
Toledo, Ohio	29.32	744.7	29.98	761.5	59	15.0	76	SW	2	0.9		0	Haze		Calm	0	0	Clear	
Tucson, Arizona	27.51	698.7	30.06	763.5	68	20.0	84	SE				0	2s		N	0.38	9.7	Fair	
Tybee Island, Georgia	30.06	763.5	30.09	764.3	77	25.0	52	SE	8	3.6		5ck	5ks	W	Calm	0	0	Cloudy	
Umatilla, Oregon	29.61	752.1			55	12.8	53	SE	8	3.6		0	0			0	0	Clear	
Vicksburg, Mississippi	29.74	755.4	29.99	761.7	69	20.6	95	SE	5	2.2			10s		Calm	0.01	0.3	Threatening	
Virginia City, Montana	24.38	619.2	29.86	758.4	43	6.1	75	Calm	0	0		0	0			0.16	4.1	Clear	
Visalia, California	29.46	748.3	29.82	757.4	62	16.7	56	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	30.01	762.2	30.12	765.0	63	17.2	64	NW	2	0.9		0	0			0	0	Clear	
Wickenburg, Arizona					78	25.6	24	Calm	0	0		0	0			0	0	Clear	
Wilmington, N. Carolina	30.05	763.3	30.12	765.0	65	18.3	63	NE	4	1.8		10cs	0	W		0	0	Cloudy	
Winnemucca, Nevada	25.68	652.3	30.04	763.0	55	12.8	27	NE	12	5.4		0	0			0	0	Clear	
Wood's Holl, Mass	29.93	760.2	29.98	761.5	66	18.9	63	NW	10	4.5		0	0			0	0	Clear	
Yankton, Dakota	28.67	728.2	29.93	760.2	58	14.4	76	SW	3	1.3		10cs	0	NE		0	0	Cloudy	
Yuma, Arizona	29.66	753.4	29.81	757.2	75	23.9	54	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.11	764.8	30.16	766.1	36.5	2.5	95	N	10	4.5		6ck	0	SW		0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.99	761.7	30.01	762.2	80	26.7	74	NE	1.2	0.5		2cs	0	Calm		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.18	766.6	30.19	766.8	80	26.7	82	Calm	0	0		5c	0	Calm		0.09	2.3		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.90	759.4	29.98	761.5	84	28.9		NE								0	0	Clear	F. M. Everett.
St. Thomas, W. I.					83	28.3		E			1	2k	5ks	E	E			Fair	
Pt-a-Pitre, G'd'loupe, W. I.	29.88	758.9	29.90	759.4	84	28.9	91	E				0	8ks		E				L. V. Bigard.
Bridgetown, Barbados, W. I.	30.02	762.5	30.04	763.0	78	25.6	90	E	2	0.9		10k	10n	Calm		0.20	5.1	Rainy	E. Racker.
Paramaribo, D. Guiana, S. A.			30.03	762.7	83	28.3	79	E			1	5k	6ks	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Grpot.
Medellin, Colombia, S. A.	25.29	642.4			66.5	19.2	75	Calm			0	7cs	1s			0.02	0.5	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.10	764.5	30.12	765.0	74.5	23.6		ENE			2					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672. m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.84	757.9	59	15.0	57	13.9	87	SW	19	8.5			0			0	0			Misty	
Navy Yard, Pensacola, Fla.	30.18	766.6			77	25.0	82	NE	10	4.5			9			0.2	5.			D. clouds	
Navy Yard, Portsmouth, N.H	30.04	763.0	72	22 2	60	15.6	65	NW	9	4.0					NW	0	0			Clear	
Naval Hospital, Yokohama, Japan	29.63	752.6	73	22.8	72.5	22.5	90	NE			5		7ks;d		NNE	1.42	36.1			Clearing	
Alert, Yokohama, Japan	29.75†	755.6†	75	23.9	75	23.9	90	NNE			3–4		7		NE			Long	ENE	Squally	
Alliance, Smyrna, Turkey	30.04	763.0	84	28.9	85	29.4	76	W			2–3		0							Clear	
Ashuelot, Che-foo, China	30.00	762.0	75	23.9	72	22.2	80	SSE			1		1							D. clouds	
Canonicus, New Orleans, La	30.01	762.2	56	13.3	79	26.1	91	E			1		7		S&E					Partly cl'dy	
Colorado, New York, N. Y.	30.06	763.5	64	17.8	63	17.2	67	WSW	10	4.5			3		W	0	0			Fair	
Despatch, Beikos Bay, Bosphorus	30.06	763.5	83	28.3	80	26.7	91	Calm			0		0					Smooth		Clear	
Essex, N. 40° 01′, W. 41° 24′	30.25	768.3	73	22.8	73	22.8	95	SE			1		2					Smooth	N&E	D. clouds	
Franklin, Norfolk, Va	30.10	764 5	63	17.2	69	20.6	80	NE	4	1.8			8		NE	0	0			D. clouds	
Frolic, Rio de Janeiro, Brazil	30.49	774.4	67	19.4	69	20.6	90	NNE			1		7ck		Calm	0	0			D. clouds	
Gettysburg, N. 42° 05′, E. 11° 30′	29.86‡	758.4‡			83	28.3	96	SE			1		7		Calm	0	0	Moderate.	S	D. clouds	
Kearsarge, N. 29° 49′, E. 125° 02′	30.02	762.5			83	28.3	91	SW			3		1		SW	0	0	Smooth		Hazy	
Lackawana, N 48° 20′, W. 125° 00′	30.12	765.0			60	15.6	88	NE			1–2		9		E			Smooth	SW	D. clouds	
Marion, Constantinople, Turkey.	29.97	761.2	77	25.0	79	26.1	82	S			2		0			0	0	Smooth		Blue sky	
Michigan, Erie, Pa	29.47	748.5	67	19.4	67	19.4	69	SSW			1		0							Clear	
Monocacy, Yokohama, Japan	29.61	752 1	75	23.9	75	23.9	100	N			5		3		N&E	Light	Light			D. clouds	
New Hampshire, Port Royal, S. C	30.28	769.1			75	23.9	81	NE	7	3.1			7		NE	0	0			D. clouds	
Omaha, Mexillones, Bolivia	30.11	764.8	65	18.3	63	17.2	72	Calm	0	0			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.14†	765.5†	68	20.0	66.5	19.2	84	N			1		6					Long	W	Misty	
Ossipee, Norfolk, Va	30.19	766.8	70	21.1	67	19.4	74	NNE			2		5		SE					D. clouds	
Palos, Shanghai, China	29.93	760.2	78	25.6	73	22.8	95	SW			2		10		W					Rainy	
Plymouth, New York, N. Y.	30.30	769.6	67	19.4	63	17.2	100	WSW			3		3		S&W					Clear	
Ranger, N. 27° 47′, E. 122° 15′	30.00	762.0			83	28.3	83	SW			3		1		Calm			Smooth		Clear	
Richmond, Boston, Mass	30.00	762.0	61.2	16.2	60.8	16.0	68	W			3		0			0	0			Blue sky	
Rio Bravo, Brownsville, Texas	29.79	756.7			80	26.7	91	SSE			1		0							Blue sky	
Santee, Annapolis, Md	30.16	766.1	65	18.3	63	17.2	62	W			1		0			0	0			Clear	
St. Louis, League Island, Pa	30.02	762.5	65	18.3	63	17.2	72	WSW	10	4.5			0			0	0			Clear	
Tennessee, Yokohama, Japan	29.70	754.4	75	23.9	74	23.3	95	NNE	12	5.4			4		NE	2.00	50.8	Moderate		D. clouds	
Trenton, Villefranche, France	30.00†	762.0†	78	25.6	78	25.6	86	SW	4	1.8			1		Calm	0	0			D clouds	
Vandalia, Beirut, Syria	29.96	761.0	84	28.9	83	28.3	67	NNW			0–1		1							D. clouds	
Wabash, Boston, Mass	29.96	761.0	60	15.6	64	17.8	58	WSW	8	3.6			1		Calm	0	0			D. clouds	
Wyoming, Washington, D. C.	30.38†	771.6†	64	17.8	64	17.8		S&W			1		1							D. clouds	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio N. 26° 33′, E. 121° 23′					82	27.8		SSW			5		4		SW	Long.	SE	Hazy	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
S. S. Oceanic N. 37° 24′, E. 167° 35′			29.99†	761.7†	73	22.8		WNW			4		Haze			Long	W	D. clouds	Capt. W. H. Kidley.
																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 49° 58′, W. 22° 14′	W		30.16	766.1	62.5	16.9	77	S			6		kh		S	Rough		Overcast	Capt. A. Jaeger.
S. S. Ohio N. 49° 27′, W. 14° 29′			30.41	772.4	60.0	15.6	65	S			2		k		SSE	Smooth		Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Newport, R. I.			29.93	760.2	64	17.8	68	W	10	4.5		0	0					Clear	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 5, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.97	761.1	84.9	29.4	60	NNW			3		2			0	0	Clear	Michel.
Algiers			30.10	764.4	80.2	26.8	73	ENE			3		4			0	0	Fair	Peter.
La Calle			30.07	763.8	78.1	25.6	77	NE			3		6			0	0	Fair	Fleury.
Tunis			30.11	764.9	93.2	34.0		NE			3		6			0	0	Fair	Jacques.
Sfax			30.11	764.7	86.0	30.0		N			3		6			0	0	Fair	Husson.
Saida			29.97	761.1	86.9	30.5		SSW			4		2			0.157	4.0	Clear	Millot.
Tebessa			30.12	765.1	82.8	28.2		W			2		5			0.984	25.0	Fair	Bourgeois.
Geriville			29.98	761.6	61.2?	16.2?	76	SE			2		8			0.197	5.0	Cloudy	Lemaillot.
Laghouat			30.10	764.6	90.5	32.5	42	E			4		4			0	0	Fair	François.
Biskra			30.10	764.6	93.9	34.4	55	NW			1		7			0	0	Cloudy	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.59	751.5	30.13	765.4	61.7	16.5	66	NE			3		7			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.38	746.3	30.15	765.7	58.6	14.8	64	WNW			2		6			0	0		Dr. Wierzbiski.
Eperies	29.23	742.4	30.10	764.5	60.4	15.8	54	N			1		8k;s		S	0.228	5.80		Julius Mikolik.
Gratz	28.80	733.9	30.13	765.2	64.4	18.0	66	ENE			3		7			0.181	4.6		Andreas Rospini.
Hermannstadt	28.59	726.2	29.98	761.6	62.6	17.0	78	NNE			1		10			0.256	0.65	Rainy	Prof. Reissenberger.
Kremsmünster	28.82	732.0	30.12	765.0	56.1	13.4	75	WNW			3		10			0.343	8.7		Prof. C. Wagner.
Lemberg	29.06	738.2	30.04	763.1	59.4	15.2	64	NW			2		3			0	0		Dr. T. Stanecki.
Pola	29.03	760.2	30.04	763.0	73.4	23.0	44	NNE			2		1ks			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.80	756.9	30.08	763.9	64.4	18.0	58	Calm			0		10			0	0		Karl Stancel.
Trieste	29.98	761.6	30.09	764.2	67.3	19.6	55	ENE			2		0			0	0		P. Busin.
Vienna	29.47	748.6	30.17	766.3	58.6	14.8	87	NW			2		6			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.78	731.1	30.30	769.6	55.0	12.8	60	W			1		10			0	0		
Brussels	30.10	764.5	30.30	769.6	59.4	15.2	61	W			2		8		WNW	0	0		Royal Observatory.
Furnes	30.26	768.7	30.29	769.3	60.8	16.0	63	WNW			4		3			*1.374	*34.9		
Maeseyck	30.14	765.6	30.27	768.9	60.6	15.9	73	NW			2		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time. *Rain-fall in three days.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.91	759.7	30.01	762.2	56.0	13.3		WNW	11	4.9			9			0.575	14 61	Overcast	C. H. Thompson; W. Boswell.
Ardrossan	30.12?	765.0?	30.03?	762.77	58	14.4		WSW			4		8					Overcast	William McNeil.
Armagh, Observatory			30.25	768.3	59.0	15.0		WSW	10	4.5			8					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.25	768.3	57.4	14.1		W	28	12.5			1					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.30	769.6	61.0	16.1		W			2		7					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.80	756.9	30.20	767.1	60.0	15.6		W			1		6			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.28	769.1	61.2	16.2		W			1		5ks					D. clouds	H. Todd. [H.C
Cardington			30.29	769.4	62.0	16.7		W			1		2					Blue sky	John McLaren.
Chatham, School M. E	30.16	766.1	30.29	769.4	63.2	17.3		W			1		3					Blue sky	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	29.78	731.0	30.26	768.6	57.6	14.2		N			2		3					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.17	766.3	30.20	767.1	60	15.6		WSW			4		10					Overcast	J. Mac Gowan.
Dover	30.28	769.1	30.30	769.6	60	15.6		WSW			3		5					½ clouded	J. Costello.
Eccles, (near Manchester)			30.24	768.1	58.6	14.8		W	4.0	1.8			8					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.11	764.8	30.34	770.6	57.8	14.3		SSE			1		1					D. clouds	The Staff.
Fort Napier, (Natal)	27.90	708.6	30.12	765 0	73.2	22.9		E			2		0					Blue sky	Pvt. G. Sabnon, A. H. C.
Free Town, (Sierra Leone)			29.97	761.2	85.0	29.4		N			1		4					D. clouds	
Galway, Queen's College			30.21	767.3	62	16.7		W			1		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.88	758.9	29.92	760.0	75.2	24.0		E			3		9					Overcast	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.88	758.9	30.09	764.3	58.3	14.6		SSW			7		10					Squally	D. G. Maclean.
Great Yarmouth	30.24	768.1	30.25	768.3	60	15.6		W			2		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.12	765.0	30.29	769.4	63.9	17.7		N			1		3					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.09	764.3	30.31	769.9	61.5	16.4		NE			1		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.36	771.1	61	16.1		SW			4		2ck			0	0	Fine	M. P. Moyle.
Holyhead	30.21	767 3	30.26	768.6	59	15.0		WSW			3		3					D. clouds	John Tilston.
Jersey	30.06	763.5	30.35	770.9	61.4	16.3		S			1		1					Blue sky	J. Fisher.
Kew, Observatory			30.30	769.6	60.0	15.6		W	6	2.7			4					D. clouds	The Staff.
Kingstown	30.27	768.8	30.30	769.6	58	14.4		WNW			4		5					D. clouds	George Mitchell.
Leicester, Museum			30.26	768.6	59.9	15.5		W			1		3					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.89	759.2	29.96	761.0	86.4	30.2		NW			1		2					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	30.01	762.2	30.10	764.5	58	14.4		NW			1		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.04	763.0	85.2	29.6		N			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.07	763.8	30.26	768.6	63.2	17.3		NW			3		7k;ks;d		NW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.74	755.4	30.26	768 6	60.0	15.6		SW			2–3		8					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.29	769.4	60	15.6		WNW			1		2					Blue sky	F. Lucas
Plymouth	30.25	768.3	30.33	770.4	59.0	15.0		NNW			1		6					D. clouds	John Merrifield.
Roche's Point	30.28	769.1	30.32	770.1															W. Kennedy.
Saint Ann's Head	30.15	765.8	30.34	770.6	59	15.0		W			2		4						John C. Walker.
Sandwick Manse, (Orkneys)			29.99	761.7	52	11.1		NW	14	6.3			6					Showery	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.80	756.9	86.8	30.4		S			1		0					Blue sky	Sergt. W. H. Lyne.
Sheffield	30.00	762.0	30.24	768.1	59.3	15.2		NW			3		6			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.14	765.5	30.18	766.6	62.3	16.8	69	W			3		7			0.050	1.27	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					57.1	13.9		SW			3		6					D. clouds	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C. (Hebr.)			29.96	761.0	52	11.1		N			1		10					Raining	John Smith.
Strathfield Turgiss	30.16	764.5	30.31	769.9	62.4	16.9		W			1		1					Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso			29.97	761.2	54	12.2		NW			2		8					Gloomy	John Trotter.
Truro, Royal Institution			30.42	772.7	63	17.2		N			4		3					D. clouds	W. Newcombe.
Valencia, Observatory			30.34	770.6	58.3	14.6		WSW	11	4.9			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		W			3		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.05	763.3	30.09	764.3	70.2	21.2	77	NW	7	3.1		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.84	757.9	50.0	10.0	82	NW			2		6k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.08	764.0	58.1	14.5		W			6		10k			0.30	7.6	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.98	761.5	30.17	766.3	74.5	23.6	68	E	15.9	7.1		5	6	Calm	E	0.01	0.3	Cloudy	C. Meldrum.
Melbourne, Observatory	30.08	764.0	30.17	766.3	54.0	12.2	87	SSE	5	2.2			0			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.02	762.5	55	12.8		E			4		10			0.3	8.		J. Youngclause.
North Unst, (Shetland Is.)			29.87	758.7	51	10.6		NW			4	0	6						Robert Burnet.

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

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 45° 5′, W. 53° 45′			30.32	770.1	65	18.3		SW			1		3			3	SW	Blue sky	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 49° 25′, W. 48° 0′			30.26	768.6	57	13.9		SW			4		10			0		Foggy	Capt. H. Manning.
Barque Sbrata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.29	667.8			67.1	19.5	90	E			2		9s;d		NE	Blank	Blank		Federico Maison.

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

DANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	30.02	762.5	30.07	763.7	54.7	12.6	61	W			2		7						
Fanöe	30.07	763.7	30.09	764.2	57.6	14.2	66	W			4		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	30.01	762.3	30.05	763.2	46.4	8.0	72	N			2								
Vestervig	29.82	757.3	29.98	761.6	53.6	12.0	86	W			4		8						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.80	756.8	30.35	770.8	64.4	18	57	ESE			2		2		W	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.04	762.9	30.11	764.9	69.8	21	45	N			6		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.76	756.0	30.34	770.5	56.3	13.5	64	NE			2		8		ENE	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	30.05	763.2	30.33	770.4	62.2	16.8	50	E			1		8		N	0.028	0.70	Very cloudy	Normal School.
Besançon	29.42	747.2	30.31	769.9	58.3	14.6	72	ENE			2		5		NE	0.051	1.3	Cloudy	Normal School.
Bourg-en-Bresse	29.37	746.1	30.31	769.8	59.9	15.5	64	NW			4		10kn		N	0	0	Covered	Normal School.
Bourges, Normal School	29.67	753.5	30.21	767.4	59.9	15.5	70	NE			4		5		N	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.02	762.4	30.23	767.9	61.3	16.3	53	NNE			1		5		NE	0	0		The Staff.
Carcassonne, Normal School	29.72	754.8	30.12	765.1	76.1	24.5	76	NNE			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons sur-Marne, N. Sch'l	30.02	762.5	30.34	770.6	58.8	14.9	60	N			2		5k		N	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.88	733.6	30.23	767.7	62.2	16.8	80	NE			1		5			0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.41	746.9	30.29	769.3	56.5	13.6	71	NW			2		5		NW	0.12	3.	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.00	736.5	30.14	765.5	76.3	24.6	31	NW			2		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.10	764.4	30.31	769.8	64.6	18.1	50	N			2		2		N	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	30.02	762.6	30.33	770.4	61.7	16.5	56	E			3		5		E	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.35	745.6	30.27	768.9	58.5	14.7	70	NE			2				SW	0	0		Pin, Director.
Lorient, Naval Observatory	30.22	767.5	30.32	770.1	61.9	16.6	46	NE			3		5		NE	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.48	748.9	30.17	766.3	61.2	16.2	77	NE			4		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.34	745.1	30.37	771.4	59.9	15.5	88	NW			2		8		NW	0.492	12.5	Very cloudy	Normal School
Nismes, Normal School	29.80	758.4	30.06	763.5	69.4	20.8	39	S			8		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	30.09	764.2	30.33	770.3	60.4	15.8	49	ENE			1		5k		NE	0.014	0.35	Cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.23	767.8	30.26	768.6	68.5	20.3	46	E			5		1		E	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.20	767.1	30.29	769.3	63.3	17.4	51	NE			1		8		NE	0	0	Very cloudy	F. Lucard, Director.
Tarbes, Normal School	29.12	739.6	30.17	766.3	71.6	22	44	E			3		2		N	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.83	757.6	29.85	758.3	80.6	27										0.16	4.		L'Abbé Marchésl.
Marseilles, Observatory			30.07	763.8	76.5	24.7	40	WNW			2		0			0	0		The Staff.
Mont-Louis	25.03	635.8	30.35	770.8	60.4	15.8	30	ESE	9.3	4.17			2		NW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.04	763.1	30.32	770.1	63.9	17.7	45	E			2-3		7		N	0.012	0.3		Marié Davy, Director.
Perpignan			30.13	765.2	70.2	21.2	32	E	3.7	1.67			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.45	544.8			46.8	8.2		SW			1		7					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.67	575.9			51.8	11.0		SW			1		7			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.16	766.1	30.33	770.3	61.7	16.5	49	NE			1		1			0	0		E. Renou.
Toulouse, Observatory	29.48	748.7	30.21	767.2	65.7	18.7	44	ENE			1		2			0	0		The Staff.
Tours	30.08	764.1	30.28	769.1	64.0	17.8	41	ENE			2		5		NNE	0	0		C. Marquet.
Versailles, (near Paris)			30.33	770.3	61.5	16.4	46	E			1		7			0.015	0.38	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.89	759.1	29.91	759.7	71.4	21.9	92	N	3.6	1.6			7k			0.189	4.8	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg											3		8			0	0		Prof. T. Hoh.
Berlin	30.04	763.0	30.21	767.3	59.9	15.5	52	SW			4		9			0.013	0.32		Prof. Arndt.
Breslau	29.69	754.0	30.22	767.6	59.5	15.3	53	NW			1		9			0.102	2.6		Royal University Obs'y.
Carlsruhe	29.84	757.9	30.27	768.8	57.9	14.4	71	N			4		6	NW		0	0		Albert Senz.
Cassel	29.73	755.2	30.34	770.7	58.1	14.5	58	NW			2		8kn			0	0		Dr. H. Möhl.
Crefeld	30.11	764.7	30.27	768.8	60.4	15.8	50	NW			1		10			0.167	4.0		Director Lose.
Emden	30.18	766.5	30.21	767.4	59.0	15.0	63	W			1		9			0.035	0.9		Prof. Prestel.
Frankfort on the Main	29.96	761.0	30.33	770.3	60.1	15.6	55	W			4		5	W		0.118	3.0	Light rain	Physical Society.
Friedrichshafen	28.82	732.1	30.26	768.5	59.4	15.2	71	WSW			5		9k			0.012	0.3	Cloudy	M. Wilhelm.
Hamburg	30.12	765.0	30.19	766.8	58.5	14.7	67	WNW			3		5			0	0		Captain F. Hegemann.
Kiel	30.11	764.9	30.13	765.3	57.9	14.4	71	W			2								Prof. G. Karsten.
Königsberg, (Prussia)	29.97	761.2	30.05	763.3	61.7	16.5	58	W			0		1			0.079	2.0		Prof. E. Luther.
Köslin			30.11	764.8	60.8	16.0		Calm			2		8	WNW		0.079	2.0		H. Müller.
Leipsic, Observatory	29.85	758.3	30.28	769.0	59.4	15.2	56	NW			3		1ck						Prof. Bruhns.
Memel, Naval School	29.97	761.1	30.01	762.3	58.1	14.5	68	WNW			4		9			0	0		Reinbrecht von Skalweit.
Neufahrwasser	30.06	763.5	30.08	763.9	62.1	16.7	52	WNW			5		10			0	0		A. Lothes.
Posen	29.91	759.7	30.20	767.1	61.0	16.1	54	NW			2		6	WNW		0.011	0.27		Dr. Magener.
Strassburg Obs., (in Alsace)	29.74	755.3	30.28	769.2	60.8	16.0	62	E			1		10	NE		0.244	6.2		Dr. Schur.
Stuttgart	29.32	744.7	30.21	767.2	54.3	12.4	85	N											Prof. Schoder.
Treves, (Trier)											1		9	W		0.035	0.9		Prof. Flesch.
Weissenburg, (Bavaria)	28.68	728.4	30.18	766.6	57.4	14.1	55	NW			4		2			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.18?	766.6?	30.14?	765.5?	57.6	14.2	59	WNW											E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.48	748.8	29.83	757.6	95.7	35.4		SW										Very Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.59	751.6	29.64	752.9	82.9	28.3	81	SW	25.0?	11.2?			10			0.01	0.3	Threatening	
Deesa																			
Bombay	29.70	754.3	29.74	755.3	83.3	28.5	84	SW	8.0	3.6			10	WSW		0.02	0.5	Misty	
Poona	27.68	702.9	29.66	753.4	79.6	26.4	79	W					10		W	0	0	D. clouds	
Lahore	28.85	732.7	29.58	751.2	85.0	29.4	61	N	1.5	0.7			8	SW	SW	0	0	Cloudy	
Belgaum	27.26	692.4	29.81	757.1	72.8	22.7	92	W	9.0	4.0			10	W	W	0.05	1.3	Drizzling	
Bangalore																			
Roorkee	28.66	728.0	29.53	750.0	92.8	33.8	48	NW	2.8	1.2			2			0	0		
Agra	29.00	736.5	29.53	750.2	99.7	37.6	25	W											
Trichinopoly																			
Nagpur	28.62	727.0	29.65	753.0	87.3	30.7	72	Calm	1.6	0.7			9					Thunder-storm	
Madras																			
Lucknow	29.17	740.9	29.52	749.9	99.1	37.3	34	W	5.5	2.5			8	ESE		0	0	D. clouds	
Allahabad	29.26	743.1	29.56	750.7	92.7	33.7	69	SSW	2.8	1.2			5			0	0	D. clouds	
Patna	29.40	746.8	29.58	751.3	89.5	31.9	66	WNW	0.8	0.4			10	NW	NW	0	0	Overcast	
Hazaribagh	27.64	702.1	29.62	752.3	84.8	29.3	72	Calm	4.6	2.1			8					Raining	
Cuttack	29.55	750.4	29.63	752.5	89.2	31.8	68	E	15.6	7.0			5			0	0	D. clouds	
Calcutta (Alipore)	29.62	752.4	29.64	752.9	86.5	30.3	77	WNW	3.0	1.3			1	W		0	0	Blue sky	
Goalpara	29.30	744.1	29.69	754.0	76.1	24.5	98	Calm	2.9	1.3			10	W	E	1.75	44.5	Overcast	
Chittagong	29.62	752.4	29.71	754.7	85.1	29.5	86	SW	3.8	1.7			8			0	0	Gloomy	
Sibsagar	29.41	746.9	29.74	755.5	76.1	24.5	93	NNE	2.2	1.0			10	SW	SW	0.05	1.3	D. clouds	
Rangoon																			
Jubbulpore	28.31	719.1	29.66	753.2	85.9	29.9	64	NW	2.8	1.2			8	NW	NW	0	0	D. clouds	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.32	566.9	30.02	762.4	45.3	7.4	66	W			2		7	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.30	566.3	30.00	761.9	39.0	3.9		ENE			1		8	SSE		0	0		Signora Ernesta Manfredi.
Udine	29.66	753.4	30.06	763.5	69.1	20.6	44	SW	1.8	0.8			2			0.465	11.8		Prof. Giovanni Clodig.
Padua	29.96	761.0	30.07	763.7	71.8	22.1	38	SE	6.9	3.1			2			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.87	758.8	30.06	763.5	71.6	22.0	37	ENE	3.1	1.4			1	W		0	0		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.83	732.3	30.10	764.6	71.6	22.0	50	S			4		3			0.102	2.6		Prof. Trionfini Carlo.
Domodossola	29.03	737.3	30.02	762.4	72.7	22.6	31	SW			6		2			0	0		Prof. Giuseppe Calza.
Milan	29.68	751.3	30.07	763.8	77.4	25.2	45	ESE			2		1			0	0		Ab. Gio. Capelli.
Pavia	29.76	755.8	30.09	764.2	71.1	21.7	39	NE			2		1			0	0		Prof. Gio. Cantoni.
Moncalieri	29.21	741.8	30.08	763.9	70.7	21.5	43	ESE	3.1	1.4			4	NW		0	0		Prof. P. F. Denza.
Mondovi	28.20	716.2	30.03	762.7	68.0	20.0	42	ESE			6		4	NW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.83	757.6	30.04	763.1	76.5	24.7	28	E			8		1			0	0		Prof. L. Vassallo.
Genoa	29.87	758.7	30.03	762.8	79.0	26.1	35	N	9.4	4.2			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.84	757.9	30.09	764.2	71.1	21.7	40	NE			2		2			0	0		Dott. G Manzi.
Parma	29.75	755.6	30.06	763.4	70.0	21.1	57	ESE			4		3			0	0		Prof. P. Pigorini.
Florence	29.79	756.6	30.03	762.8	77.9	25.5	41	N			4		3			0	0		Cav. F Meucci.
Leghorn	29.92	759.9	30.00	762.0	76.1	24.5	55	NNW	4.3	1.9			3			0	0		Prof. P. Monte.
Siena	28.82	732.1	29.99	761.7	70.3	21.3	55	E	0.7	0.3			4	W		0	0		Prof. L. Toscani.
Urbino	28.54	724.8	30.03	762.7	69.1	20.6	63	NE			4		6			0	0		Prof. P. Serpieri.
Pesaro	30.02	762.6	30.07	763.8	71.8	22.1	67	N	26.2	11.7			1	SW		0	0		Prof. Luigi Guidi.
Ancona	29.96	760.9	30.06	763.5	74.8	23.8	32	NNW			4		2			0	0		Prof. F. DeBosis.
Grosseto	29.85	758.3	29.96	761.0	86.0	30.0	50	S			2		2	SW		0	0		Avv. P. Ponticelli.
Rome	29.81	757.2	29.98	761.5	81.5	27.5	29	N	0.7	0.3			0			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.83	757.7	30.01	762.3	83.8	28.8	51	SSW			4		1	W		0	0		Prof. L. Palmieri.
Lecce	29.71	754.6	29.95	760.7	83.5	28.6	48	NE	14.3	6.4			7			0	0		Prof. C. DeGiorgi.
Cosenza	29.14	740.1	30.02	762.4	88.7	31.5	46	NNW	4.3	1.9			7			0	0		Prof. F. D. Conti.
Cagliari	29.77	756.2	29.95	760.8	80.6	27.0	37	NW			4		2	W		0	0		Prof. A. Pachiotti.
Girgento, (Sicily)	29.88	759.0	29.93	760.2	82.8	28.2	64	N			2		7	SE		0.020	0.5		Prof. F. Cafiero.
Palermo	29.71	754.7	29.95	760.8	83.8	28.8	43	WNW	14.3	6.4			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.08	713.2	29.92	759.9	86.2	30.1	29	WNW			4		3	E		0	0		Prof. A. Pagani.
Syracuse	29.81	757.1	29.88	759.0	87.8	31.0	56	SE			4		5	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.47	748.4	30.02	762.5	81.7	27.6	40	WSW	8.1	3.6			2	W		0	0		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.76	755.9	29.84	757.9	69.8	21	97	NNE	12.2	5.5			10n			0.57	14.5	Light rain	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.06	585.7	30.04	763.0	58.6	14.8	87	W	0.2	0.07		1c	5s			0.14	3.5	Clear.	Mariano Bárcena
																			Vicente Reyes.
																			Miguel Perez.
																			(Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	30.32	770.0	30.32	770.0	58.6	14.8		W			4					0.118	3.0		
Groningen	30.15	765.9	30.21	767.3	57.7	14.3		NW			2					0.012	0.3		
Helder	30.19	766.9	30.19	766.9	58.5	14.7		W			4					0.024	0.6		
Utrecht	30.23	767.7	30.27	768.9	58.5	14.7	77	WSW			2		5			0.016	0.4	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.83	757.6	29.88	759.0	49.0	9.8	95	SSE	8.5	3.8			5			0.646	16.4	Raining	
Brönö	29.78	756.5	29.82	757.5	45.3	7.4	88	SE	4	2			10			0.370	9.4	Raining	
Christiania	29.71	754.6	29.85	758.3	55.8	13.2	80	SSW	4	2			10			0.016	0.4		
Tromsö	29.71	754.6	29.75	755.7	47.5	8.6	76	Calm	0	0			10			0	0		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.80	757.0	29.99	761.8	66.6	19.2	73	NE	18.1	8.1			3			0.591	15.0		Dr. J. A. Sampaio.
Campo Major	28.97	735.7	29.94	760.5	82.4	28.0	42	SW	6.3	2.8			9	SSW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.89	759.2	29.98	761.4	77.0	25.0	66	W	9.8	4.4			1			0.232	5.9		Capt. D. A. de Cunha.
Lisbon, Observatory	29.61	752.2	29.97	761.2	69.4	20.8	68	SW	15.0	6.7			8	SSW		0	0		The Staff.
Ponta Delgada, (Azores)	29.89	759.3	29.97	761.1	64.8	18.2	86	NNE	4.9	2.2			10			0.161	4.1	Raining	

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

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

RUSSIAN SERIES.

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

Warsaw	29.68	753.9	30.10	764.5	58.8	14.9	53	WNW	13	6			4						Astronomical Obs.
Wilna	29.56	750.9	29.98	761.4	59.7	15.4	59	NW	4	2			3						Astronomical Obs.
Dorpat	29.69	754.0	29.93	760.1	53.8	12.1	85	SW	2	1			6						Physical Cabinet.
St. Petersburg	29.89	759.2	29.91	759.6	57.0	13.9	46	E	4	2			1						Central Physical Obs
Kuopio	29.54	750.3	29.86	758.5	52.7	11.5	86	SSW	7	3			7						Ch. Forsten.
Kieff	29.25	743.0	29.87	758.6	63.9	17.7	83?	NW	13	6			8						Physical Cabinet.
Nikolaiev	29.87	758.6	29.94	760.4	75.9	24.4	69	N	0	0			10						Kurdakof.
Kertch	29.89	759.2	29.91	759.7	78.1	25.6	74	SW	2	1			7					Raining	Lagorio.
Moscow	29.25	743.0	29.80	757.0	50.0	10.0	98	S	9	4			10					Raining	Meteorological Obs.
Lugan	29.56	750.8	29.76	755.8	76.1	24.5	73	WNW	2	1			9			Blank	Blank		Meteorological Obs.
Archangel	29.83	757.6	29.85	758.1	44.8	7.1	88	WNW	22	10			10						Ogorodnikof.
Tiflis	28.49	723.6	29.80	757.0	93.0	33.9	31	SE	4	2			2						Physical Observatory.
Astrakhan	29.96	761.0	29.88	758.9	85.5	29.7	43	N	9	4			4						Sebastianof.
Kasan	29.67	753.5	29.93	760.1	64.8	18.2	42	SW	2	1			10						Physical Cabinet.
Orenburg	29.48	748.7	29.83	757.7	63.9	17.7	83	E	9	4			10					Raining	Tschernischef.
Ekaterinburg	28.97	735.7	29.90	759.4	58.1	14.5	54	W	9	4			3						Meteorological Obs.
Nukuss	29.65	753.2	29.87	758.8	81.7	27.6	39	NNE	2	1			0						
Kasaly																			Bobrof.
Tashkend	28.25	717.6	29.89	759.1	75.9	24.4	71	Calm	0	0			0						Michelson.
Barnaul	29.40	746.8	29.91	759.8	57.4	14.1	74	SW	2	1			10						Meteorological Obs.
Yeniseisk	29.35	745.6	29.50	749.3	52.3	11.3	88	SW	9	4			9			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.71	754.6	29.85	758.2	79.0	26.1	60	SE	18	8			3						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					46.8	8.2	94	Calm	0	0			9						

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.83	706.8			80.1	26.7	54	NE	2.9	1.3		4	5			0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.99	761.7	30.07	763.8	80.5	26.9	80	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.85	758.1	29.94	760.5	87.3	30.7	50	ESE	21.3	9.5		0	10		SE	0.004	0.1		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.93	760.1	81.0	27.2	86	SE				2c	1k	SE	SE	Inap.	Inap.	Clear	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Haparanda	29.78	756.5	29.82	757.5	49.6	9.8	87	S			2		0			0.12	3.		
Umea	29.80	756.8	29.85	758.1	56.8	13.8	57	SW			2		5			0	0		
Hernosand	29.81	757.2	29.86	758.5	60.1	15.6	51	W			2		5			0	0		
Stockholm	29.72	754.8	29.89	759.3	58.6	14.8	47	Calm			0		4			0.012	0.3		
Wisby	29.94	760.5	30.00	762.0	57.9	14.4	74	WNW			6		3			0	0		
Sub-Series.																			
Upsala	29.80	756.8	29.87	758.7	57.7	14.3	59	SSW	4.9	2.2			4		SW	0.004	0.11		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.80	731.6	30.20	767.1	63.7	17.6	56	NNE			1		1			0	0	Clear	The Observatory.
Zurich	25.63	727.2	30.26	768.6	55.8	13.2	80	W			1		8			0.039	1.0	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +4.2 mm; Thermometer, —2.0 cent.; Relative Humidity, —10 per cent.

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

TURKISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.87	758.6	89.1	31.7	49	N	4	2.0			0			0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.85	758.3	89.2	31.8		SE			1		2						B. Stéfanidès.
Valona			30.06	763.5	83.3	28.5		NW			2		5			0	0	Cloudy	A. Bertrand.
Varna			29.88	759.0	84.2	29.0		NW			2		0			Blank	Blank		Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.70	754.4	29.81	757.1	87.4	30.8	58	W			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	29.96	761.0	30.03	762.7	58.6	14.8	77	SW	17	7.6			0			0.77	19.6		Hon. J. Ferguson.
Brockville, Ontario			30.00	762.0	64	17.8		SW	4	1.8			8s		SW	0.01	0.3	Cloudy	W. R. Bigg.
*Chatham, N. B.			30.06	763.5	55	12.8	86	SW	2	0.9		10c	0	SW		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.16	766.1	60	15.6	83	SW	8	3.6		0	0			0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.78	756.4	29.97	761.2	61.3	16.3	85	NW			2		10s			0.299	7.60	Unsettled	James Smith, M. A.
Dalhousie, N. B.	29.99	761.7	30.03	762.7	50	10.0	88	NE			1					0	0	Threatening	H. A. Johnson.
Esquimault, B. C.	29.87	758.7	29.92	760.0	58.2	14.6	94	SW				3ck	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			29.93	760.2	52	11.1	93	S	5	2.2			10n		Calm	0.17	4.3	Cloudy	J. McWilliams.
Fredericton, N. B.	30.06	763.5	30.13	765.3	59.1	15.1	82	SE	8	3.6		2ck	0	SW		Inap.	Inap.	Fair	Prof. Harrison.
*Fort Garry, Manitoba			30.17	766.3	38	3.3	96	Calm	0	0		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.26	743.2	30.04	763.0	61.9	16.6	88	NE			2	5k	5n	NE		0	0	Cloudy	H. J. Strang, M. A
Granton, Ontario	28.90	734.0	29.98	761.5	58	14.4	94	Calm			0	0	0			0	0	Clear	James Grant.
*Halifax, N. S.	30.08	764.0	30.21	767.3	60	15.6	86	S	6	2.7		0	0			0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.68	753.9	30.04	763.0	63.7	17.6	77	SW			2	4c	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.26	768.6	30.28	769.1	61	16.1	77	SW			4	0	1ks		W	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.68	753.9	30.04	763.0	65	18.3	84	SW	6	2.7			10ks		Calm	0	0	Cloudy	S. Woods, M. A
*Montreal, Quebec	29.77	756.1	29.97	761.2	61	16.1	84	W	8	3.6			10n			0.04	1.0	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.39	746.5	30.09	764.3	52	11.1	96	N	7	3.1		2cs	5ks	W	W	0.12	3.0	Fair	Rev. R. Mosley
Peterboro, Ontario	29.28	743.7	30.01	762.2	60.7	15.9	88	Calm			0		10n			0.02	0.5	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.34	745.2	30.01	762 2	66	18.9	84	Calm	0	0		10ck	0	W		0	0	Fair	H Morgan.
Port Hastings, N. S.	30.19	766.8	30.23	767.8	61.3	16.3		S	2	0.9						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.39	746.5	30.02	762.5	59	15.0	93	SW	1	0.4		8ck	0	W		0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.64	752.8	29.96	761.0	55	12.8	100	Calm	0	0			10n		Calm	0.22	5.6	Heavy rain.	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.63	752.6	30.09	764.3	51	10.6	86	NW	4	1.8			8s		NW	0.42	10.7	Cloudy	W. H. McIntyre.
St. John, N. B.	30.03	762.7	30.19	766.8	56	13.3	93	S	5	2.2			Fog			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.35	745.5	30.04	763.0	54	12.2	98	Calm	0	0			10n			0.27	6.9	Heavy rain.	K. Stewart.
Stayner, Ontario			30.00	763.5	55	12.8	93	N	1	0.4			10n		NW	0.13	3.3	Light rain	R. J. Cole.
Stratford, Ontario	28.75	730.2	30.01	762.2	57.0	13.9	91	Calm	0	0		3cs	4s	SW		0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	30.20	767.1	30.23	767.8	66	18.9	72	S	5	2.2		0	0			Inap.	Inap.	Clear	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.02	762.5	60	15.6	79	SW	3	1.3		2ck	8ks	W	W	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. Jona E. Oram.
Woodstock, Ontario																			J. Montgomery
SUB-SERIES.																			
St. Johns, Newfoundland					63.0	17.2	83	SE				2k	2s			0	0	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain fall or melted snow in the past 24 hours. Inches.	Rain fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.87	758.7	30.09	764.3	62	16.7	72	NW	5	2.2		0	5ks		NW	0	0	Fair	
Alpena, Michigan	29.42	747.3	30.07	763.8	57	13.9	81	NE	1	0.4		5ck	2s	W	Calm	0.07	1.8	Fair	
Atlantic City, New Jersey	30.14	765.5	30.16	766.1	70	21.1	84	SW	5	2.2		10c	0	W		0	0	Cloudy	
Augusta, Georgia	29.96	761.0	30.14	765.5	72	22.2	71	SE	1	0.4			10s		SE	0	0	Cloudy	
Baltimore, Maryland	30.08	764.0	30.13	765.3	64	17.8	78	SW	2	0.9		5c	Sm'e	W	Calm	0	0	Fair	
Barnegat, New Jersey	30.13	765.3	30.15	765.8	73	22.8	71	S	8	3.6		8cs	0	W		0	0	Fair	
Bismarck, Dakota	28.30	718.8	29.98	761.5	55	12.8	68	E	3	1.3		Haze	2s		Calm	0	0	Clear	
Boise City, Idaho	26.99	685.5	29.49	749.0	60	15.6	39	S	4	1.8		5k	2s	W	Calm	0	0	Fair	
Boston, Massachusetts	29.98	761.5	30.13	765.3	68	20.0	74	SW	12	5.4		0	Sm'e			0	0	Clear	
Brackettville, Texas	28.79	731.3	29.77	756.1	77	25.0	69	NE	8	3.6		10ks	0	SE		0	0	Cloudy	
Breckenridge, Minnesota	29.08	738.6	30.10	764.5	43	6.1	91	N	7	3.1		0	0			0	0	Clear	
Brownsville, Texas	29.79	756.7	29.85	758.2	79	26.1	90	E	2	0.9		Haze	Sm'e			0	0	Clear	
Buffalo, New York	29.32	744.7	30.00	762.0	66	18.9	68	SW	6	2.7		5ck	2s	SW	SW	0	0	Fair	
Burlington, Vermont	29.76	755.9	30.02	762.5	64	17.8	69	S	10	4.5		5c	2s	SW	S	0	0	Fair	
Cairo, Illinois	29.63	752.6	30.01	762.2	64	17.8	83	NE	5	2.2		10cs	0		Calm	0	0	Cloudy	
Camp Grant, Arizona								Calm				0	0			0	0	Clear	
Camp Verde, Arizona	26.71	678.4	30.21	767.3	65	18.3	48	E	1	0.4		0	0			0	0	Clear	
Campo, California	27.29	693.2	29.86	758.4	51	10.6	79	E	5	2.2		10cs	0	SW		0	0	Cloudy	
Cape Hatteras, N. Carolina	30.08	764.0	30.08	764.0	75	23.9	68	SE	6	2.7			10s		SW	0	0	Cloudy	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	69	20.6	70	E	10	4.5			10ks		W	0	0	Cloudy	
Cape Lookout, N. Carolina	30.12	765.0	30.13	765.3	78	25.6	73	S	10	4.5			10s			0	0	Cloudy	
Cape May, New Jersey	30.13	765.3	30.16	766.1	70	21.1	75	NE	4	1.8		10cs	0	Calm		0	0	Cloudy	
Charleston, South Carolina	30.07	763.8	30.13	765.3	74	23.3	72	NW	4	1.8		0	0			0	0	Clear	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	45	7.2	75	Calm	0	0			10s		Calm	0	0	Cloudy	
Chicago, Illinois	29.31	744.5	29.98	761.5	64	17.8	67	SE	1	0.4			10s		W	0	0	Threatening	
Cincinnati, Ohio	29.32	744.7	29.94	760.5	65	18.3	73	SE	8	3.6			10s		SW	0	0	Cloudy	
Cleveland, Ohio	29.34	745.2	30.05	763.3	58	14.4	75	NE	4	1.8		8cs		NE		1.20	30.5	Cloudy	
Concho, Texas	28.09	713.5	29.75	755.6	62	16.7	94	NW	4	1.8			10n		NW	0.88	22.4	Light rain	
Corsicana, Texas	29.51	749.5	29.96	761.0	69	20.6	95	Calm	0	0		1c	7s	Calm	Calm	0	0	Cloudy	
Davenport, Iowa	29.37	746.0	29.99	761.7	63	17.2	72	Calm	0	0			10s		Calm	0.75	19.1	Threatening	
Denison, Texas	29.19	741.4	29.97	761.2	66	18.9	94	S	4	1.8		0	0			0	0	Clear	
Denver, Colorado	24.88	631.9	30.21	767.3	50	10.0	78	SW	4	1.8		0	8s		SW	0	0	Fair	
Detroit, Michigan	29.33	745.0	29.99	761.7	60	15.6	82	SW	4	1.8		2k	0	SW		0.01	0.3	Clear	
Dodge City, Kansas	27.42	696.5	29.68	753.9	55	12.8	87	SW	2	0.9		2c	0	SE		0	0	Fair	
Dubuque, Iowa	29.29	744.0	29.97	761.2	59	15.0	87	NE	6	2.7			8ks		NE	0	0	Cloudy	
Duluth, Minnesota	29.45	748.0	30.13	765.3	55	12.8	87	S	6	2.7			10s		S	0	0	Cloudy	
Eagle Pass, Texas	29.12	739.6	29.82	757.4	79	26.1	65	S	6	2.7			Fog		Calm	0	0	Foggy	
Eastport, Maine	30.06	763.5	30.12	765.0	57	13.9	93	S	8	3.6			10s			0	0	Cloudy	
Erie, Pennsylvania	29.32	744.7	30.02	762.5	63	17.2	72	N	16	7.2		0	0			0.03	0.8	Clear	
Escanaba, Michigan	29.43	747.5	30.07	763.8	51	10.6	72	W				0	0			0	0	Clear	
Florence, Arizona	28.31	719.1	29.91	759.7	82	27.8	52	Calm	0	0		0	0			0.27	6.9	Clear	
Fort Bayard, New Mexico	24.09	611.9	30.09	764.3	54	12.2	68	NW	6	2.7		0	0			0	0	Clear	
Fort Craig, New Mexico	25.51	648.7			58	14.4	70	N	2	0.9			10n		Calm	0.20	5.1	Light rain	
Fort Gibson, Indian Ter.	29.43	747.5	29.95	760.7	64	17.8	94	NE	4	1.8			Fog			0.12	3.0	Foggy	
Fort Griffin, Texas	28.76	730.5	30.00	762.0	65	18.3	90												
Fort St. Michael, Alaska								N	8	3.6			10s		NE	0.44	11.2	Threatening	
Fort Sill, Indian Territory	28.78	731.0	29.86	758.4	61	16.1	94	Calm	0	0		0	0			0.28	7.1	Clear	
Fort Sully, Dakota	28.38	720.8	30.05	763.3	47	8.3	92	S	10	4.5		2k	0	S		0	0	Fair	
Galveston, Texas	29.88	758.9	29.92	760.0	84	28.9	79	NE	3	1.3		1cs	Fog	NE	Calm	0	0	Foggy	
Grand Haven, Michigan	29.34	745.2	29.97	761.2	60	15.6	88	Calm	0	0			10s		Calm	0	0	Cloudy	
Indianapolis, Indiana	29.24	742.7	30.00	762.0	63	17.2	78	S	6	2.7		2k	0	S		0	0	Clear	
Indianola, Texas	29.89	759.2	29.92	760.0	84	28.9	79												
Jacksboro, Texas								Calm	0	0		0	0			0	0	Clear	
Jacksonville, Florida	30.07	763.8	30.10	764.5	77	25.0	82	Calm	0	0			10s		Calm	0.08	2.0	Cloudy	
Keokuk, Iowa	29.36	745.7	29.95	760.7	65	18.3	78	E	2	0.9		2k	1ks	E	Calm	0	0	Fair	
Key West, Florida	30.01	762.2	30.04	763.0	85.5	29.7	68	E	1	0.4			10s		NW	0	0	Cloudy	
Kittyhawk, North Carolina	30.14	765.5	30.16	766.1	73	22.8	76	E	8	3.6			10n		NE	0.67	17.0	Heavy rain	
Knoxville, Tennessee	29.01	736.8	30.00	762.0	61	16.1	94	NE	7	3.1			10s		NE	0.05	1.3	Cloudy	
La Crosse, Wisconsin	29.28	743.7	30.00	762.0	60	15.6	88	Calm	0	0		0	0			0.04	1.0	Clear	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	62	16.7	77	SE	5	2.2		5ck	0	SE		0	0	Fair	
Laredo, Texas					82	27.8	74	SW	2	0.9		8k	0	S		0	0	Cloudy	
Leavenworth, Kansas	29.15	740.4	29.98	761.5	62	16.7	88	SE	3	1.3			10s		SE	0	0	Cloudy	
Los Angeles, California	29.51	749.5	29.84	757.9	67	19.4	79	SW	3	1.3			10s		SW	0	0	Cloudy	
Louisville, Kentucky	29.45	748.0	29.99	761.7	67	19.4	73	Calm	0	0			10s		Calm	0	0	Cloudy	
Lynchburg, Virginia	29.46	748.3	30.12	765.0	68	20.0	69	SE				0	0			0	0	Clear	
Maricopa Wells, Arizona					69	20.6	84	N	4	1.8		0	0			0	0	Clear	
Marquette, Michigan	29.44	747.8	30.13	765.3	54	12.2	61	NE	2	0.9			10s			Inap.	Inap.	Raining	
Mason, Texas	28.40	721.3	30.11	764.8	70	21.1	90	NE	1	0.4			10n		Calm	0.17	4.3	Light rain	
Memphis, Tennessee	29.68	753.9	30.00	762.0	63	17.2	100	NE	7	3.1		0	5s		NE	0	0	Fair	
Milwaukee, Wisconsin	29.35	745.5	30.02	762.5	64	17.8	83	S	7	3.1			10n		Calm	0.59	15.0	Light rain	
Mobile, Alabama	30.00	762.0	30.04	763.0	79	26.1	82	S	4	1.8		5ck	0	SW		0.02	0.5	Fair	
Montgomery, Alabama	29.82	757.4	30.05	763.3	75.5	24.2	83	Calm	0	0			10s		SW	0	0	Cloudy	
Morgantown, West Virginia	29.03	737.3	30.07	763.8	60	15.6	76	W	28	12.5		5cs	5s	W	W	0.12	3.0	Fair	
Mt. Washington, N. H.	23.94	608.1	30.30	769.6	43	6.1	83	E	2	0.9			10s		E	0.68	17.3	Cloudy	
Nashville, Tennessee	29.45	748.0	29.97	761.2	65	18.3	94	SW	1	0.4		0	Fog		Calm	0	0	Fair	
New Haven, Connecticut	30.02	762.5	30.13	765.3	69	20.6	75	SW	6	2.7		0	0			0	0	Clear	
New London, Connecticut	30.10	764.5	30.15	765.8	73	22.8	67	SE	3	1.3		1ck	0	Calm		0.06	1.5	Clear	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	78.5	25.8	86	S	7	3.1		0	0			0	0	Clear	
Newport, Rhode Island	30.12	765.0	30.16	766.1	69	20.6	79	SW	6	2.7		8c	Haze	Calm	Calm	0	0	Fair	
New York, New York	29.99	761.7	30.16	766.1	65	18.3	73	S	1	0.4			10s; fg		Calm	0	0	Cloudy	
Norfolk, Virginia	30.01	762.2	30.17	766.3	68	20.0	79	NE	8	3.6		2k	0	NE		0	0	Clear	
North Platte, Nebraska	27.13	689.1	29.66	753.4	55	12.8	79	SW	8	3.6		0	5ks		SW	0	0	Fair	
Olympia, Washington Ter.	29.91	759.7	29.95	760.7	57	13.9	87	NW	6	2.7		2k	0	NW		0	0	Clear	
Omaha, Nebraska	28.89	733.8	29.95	760.7	59	15.0	81	SE	6	2.7		5cs	0	W		0	0	Fair	
Oswego, New York	29.72	754.9	30.03	762.7	62	16.7	71	NW	2	0.9		0	0			0	0	Clear	
Pembina, Dakota	29.31	744.5	30.17	766.3	34.5	1.4	95	W	2	0.9		10cs	Haze	NW	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.11	764.8	30.16	766.1	65	18.3	83	S				0	0			0	0	Clear	
Phœnix, Arizona					74	23.3	55	NW	8	3.6		0	0			0.75	19.1	Clear	
Pike's Peak, Colorado	17.94	455.7	30.15	765.8	20.5	— 6.4	100	S	9	4.0		0	0			0	0	Clear	
Pioche, Nevada	24.14	613.1	29.91	759.7	57	13.9	25	E	1	0.4			10s; fg		Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.25	742.9	30.05	763.3	56	13.3	93	Calm	0	0		10cs	Sm'e	Calm		0	0	Cloudy	
Port Huron, Michigan	29.33	745.0	29.98	761.5	61	16.1	77	S	9	4.0		1k	Haze	Calm		0	0	Clear	
Portland, Maine	30.04	763.0	30.09	764.3	62	16.7	83	SE	4	1.8			10s		Calm	0	0	Cloudy	
Portland, Oregon	29.99	761.7	30.09	764.3	57	13.9	87	Calm				0	0			0	0	Clear	
Prescott, Arizona					52	11.1	53	E	6	2.7		0	5ks		Calm	0	0	Fair	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	80	26.7	82	N	2	0.9		2c	Haze	Calm	Calm	0	0	Fair	
Red Bluff, California	29.37	746.0	29.71	754.6	72	22.2	46	SW	9	4.0		2c	0	Calm		0	0	Fair	
Rochester, New York	29.41	747.0	30.00	762.0	62	16.7	66												

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.50	749.3	30.07	763.8	52	11.1	86	Calm	0	0		0	5s		Calm	0	0	Fair	
Sacramento, California	29.64	752.8	29.72	754.9	61	16.1	66	S	12	5.4		0	0			0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.98	761.5	66	18.9	79	E	3	1.3			10s		Calm	0.03	0.8	Cloudy	
St. Marks, Florida	30.06	763.5	30.07	763.8	76	24.4	86	E	4	1.8		5k	0	S		0	0	Fair	
St. Paul, Minnesota	29.19	741.4	30.01	762.2	56	13.3	80	N	1	0.4		0	0			0.04	1.0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.62	650.7	29.95	760.7	57	13.9	46	NW	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.23	742.4	29.79	756.7	78	25.6	86	Calm	0	0		5c	2ks	Calm	S	0	0	Cloudy	
San Diego, California	29.79	756.7	29.86	758.4	65	18.3	88	N	1	0.4			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.38	746.2	30.04	763.0	60	15.6	76	SW	4	1.8		9cs	Haze	Calm	Calm	0	0	Cloudy	
Sandy Hook, New Jersey	30.12	765.0	30.15	765.8	68	20.0	74	SW	6	2.7		10c	0	W		0	0	Cloudy	
San Francisco, California	29.74	755.4	29.80	756.9	54	12.2	86	SW	8	3.6		0	5ks		SW	0	0	Fair	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	46.5	8.1	92	NE	2	0.9			10s		W	0.03	0.8	Cloudy	
Savannah, Georgia	30.04	763.0	30.13	765.3	74	23.3	85	W	2	0.9		10ks	0	W		0	0	Cloudy	
Shreveport, Louisiana	29.74	755.4	29.95	760.7	71	21.7	95	E	4	1.8		8cs	0	Calm		0.98	24.9	Fair	
Smithville, North Carolina	30.10	764.5	30.14	765.5	74	23.3	85	N	4	1.8		5cs	5s	W	E	0	0	Cloudy	
Springfield, Massachusetts	29.94	760.5	30.06	763.5	68	20.0	74	S	6	2.7		0	0			0	0	Clear	
Stanwix, Arizona																			
Stockton, Texas					61	16.1	100	NE	4	1.8			10n		Calm	0.67	17.0	Light rain	
Thatcher's Island, Mass.	30.08	764.0	30.13	765.3	63	17.2	94	SW	8	3.6		0	0			0	0	Clear	
Toledo, Ohio	29.35	745.5	30.01	762.2	61	16.1	77	SW	3	1.3		8cs	Haze	NW	Calm	0	0	Cloudy	
Tucson, Arizona	27.52	699.0	30.06	763.5	70	21.1	44	S				0	0			0	0	Clear	
Tybee Island, Georgia	30.08	764.0	30.11	764.8	78	25.6	78	SE	4	1.8			10ks		W	0	0	Cloudy	
Umatilla, Oregon	29.53	750.0			60	15.6	57	W	24	10.7		0	0			0	0	Clear	
Vicksburg, Mississippi	29.76	755.9	30.00	762.0	74	23.3	95	S	4	1.8		2k	5s	Calm	SW	0.85	21.6	Fair	
Virginia City, Montana	24.23	615.4	29.71	754.6	50	10.0	51	SE	12	5.4		0	0			0	0	Clear	
Visalia, California	29.38	746.2	29.74	755.4	62	16.7	61	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.02	762.5	30.14	765.5	65	18.3	83	S	2	0.9		5cs	5s	W	W	0	0	Cloudy	
Wickenburg, Arizona					74	23.3	36	SE				0	0			0	0	Clear	
Wilmington, N. Carolina	30.06	763.5	30.14	765.5	69	20.6	79	NE	5	2.2			10s		N	0	0	Cloudy	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	58	14.4	31	SW	8	3.6		2cs	0	Calm		0	0	Fair	
Wood's Holl, Mass.	30.13	765.3	30.18	766.6	69	20.6	75	SW	9	4.0		0	0			0	0	Clear	
Yankton, Dakota	28.75	730.2	30.02	762.5	56	13.3	87	NE	2	0.9		5cs	0	N		0	0	Fair	
Yuma, Arizona	29.63	752.6	29.78	756.4	76	24.4	34	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.94	760.5	29.99	761.7	38.5	3.6	95	SW	6	2.7		4k	0	SW		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.01	762.2	30.03	762.7	81	27.2	79	NE	2.4	1.1		2k	0	S		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.18	766.6	30.19	766.8	81	27.2	82	Calm	0	0		8c	2s	E		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.91	759.7	29.99	761.7	84	28.9		E								0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					83	28.3		E			2	2ck	0	E		0	0	Clear	
Pt-a-Pitre, G'd'loupe, W. I.	29.85	758.2	29.87	758.7	83	28.3	83	E				5k	0			0	0		L. V. Bigard.
Bridgetown, Barbados, W. I.	30.00	762.0	30.02	762.5	82	27.8	78	E	5	2.2		5ck	5ks	E		0.14	3.6	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.00	762.0	82	27.8	83	E			1	5k	7ks	E		0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.29	642.4			61.8	16.6	83	Calm			0		10n			0.25	6.3	Light rain	Thomas Herran.
Honolulu, Oahu, H. I.	30.10	764.5	30.12	765.0	73.5	23.1		NE			4					0.05	1.3		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.: Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.: Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.81	757.2	57	13.9	57	13.9	87	SW	17	7.6			10		W	0	0			Overcast	
Navy Yard, Pensacola, Fla.	30.20	767.1			81	27.2	82	NNW	6	2.7			5							Raining	
Navy Yard, Portsmouth, N.H	30.67	779.0	71	21 7	65	18.3	78	Calm	0	0						0	0			Clear	
Naval Hospital, Yokohama, Japan	29.64	752.8	74	23.3	71	21.7	95	NE			4		10n		NNE	0.90	22.9			Heavy rain	
Alert, Yokohama, Japan	29.84†	757.9†	75	23.9	73	22.8	95	E			3		10		E			Long	E	Raining	
Alliance, Smyrna, Turkey	29.95	760.7	87	30.6	87	30.6	62	W			2–3		0							Hazy	
Ashuelot, Che-foo, China	30.00	762.0	76	24.4	74	23.3	59	E			0–1		0							Blue sky	
Canonicus, New Orleans, La	30.02	762.5	55	12.8	79	26.1	86	SE			1		3		S&E					Fair	
Colorado, New York, N. Y.	30.20	767.1	68	20.0	69	20.6	65	SSW	6	2 7			4		SW	0	0			Pleasant	
Despatch, Beikos Bay, Bosphorus	30.01	762.2	84	28.9	80	26.7	78	N			2		0					Smooth		Clear	
Essex, N. 40° 25′, W. 41° 10′	30.39	771.9	77	25.0	80	26.7	91	SE			1		2		S&E			Smooth	W	D. clouds	
Franklin, Norfolk, Va	30.22	767.6	66	18.9	69	20.6	95	SSE	1	0.4			7		SSE	0	0			D. clouds	
Frolic, Rio de Janeiro, Brazil	30.38	771.6	67	19.4	68	20.0	95	NE			2		10k		Calm	0	0			D. clouds	
Gettysburg, N. 41° 55′, E. 11° 30′	29.90‡	759.4‡			80	26.7	100	WNW			2		1		Calm	0	0	Moderate.	WNW	Hazy	
Kearsarge, N. 28° 20′, E. 123° 07′	30.02	762.5			78	25.6	95	NNW			4		9		SW	0.5	13.	Moderate.	N&E	Raining	
Lackawana, Neeah Bay, W. T	30.03	762.7			60	15.6	82	SSW			1–2		10		E			Smooth		D. clouds	
Marion, Constantinople, Turkey	29.90	759 4	80	26.7	84	28.9	64	NE			1		1		Calm	0	0	Smooth		D. clouds	
Michigan, Erie, Pa	29.55	750.6	65	18.3	65	18.3	73	S			1		5		SW					Hazy	
Monocacy, Yokohama, Japan	29.66	753.4	72	22.2	74	23.3	100	E			2		10							Heavy rain	
New Hampshire, Port Royal, S. C	30.32	770.1			76	24.4	77	NE	6	2.7			9		NE	0	0			D. clouds	
Omaha, Mexillones, Bolivia	30.16	766.1	67	19.4	64.5	18.1	73	Calm	0	0			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.14†	765.5†	67	19.4	65	18.3	89	SSE			2		9					Long	W	D. clouds	
Ossipee, Norfolk, Va	30.22	767.6	72	22.2	70	21.7	80	Calm			0		7		NE					D. clouds	
Palos, Shanghai, China	30.00	762.0	79	26.1	74	23.3	86	N			0–1		3		Calm	Blank	Blank			Damp	
Plymouth, New York, N. Y.	30.43	772.9	72	22.2	68	20.0	79	SSW			2		5		S&W					Fair	
Ranger, N. 39° 02′, E. 124° 39′	30.00	762.0			79	26.1	82	NNW			2		3		Calm			Moderate.	N	Clear	
Richmond, Boston, Mass	30.23	767.8	68.5	20.3	68.2	20.1	74	SW			3		0			0	0			Blue sky	
Rio Bravo, Brownsville, Texas	29.76	755.9			80	26.7	91	E			1		2		Calm					Hazy	
Santee, Annapolis, Md	30.20	767.1	69	20.6	68	20.0	70	SW			1		9			0	0			Overcast	
St. Louis, Leagtie Island, Pa	30.04	763.0	65	18.3	62	16.7	88	SSW	3	1.3			9		W					Cloudy	
Tennessee, Yokohama, Japan	29.66	753.4	76	24.4	73	22.8	85	E	10	4.5			10		W	0.76	19.3	Moderate.		Raining	
Trenton, Marseilles, France	30.10†	764 5†	74	23.3	72	22.2	85	NW	4	1.8			1		Calm	0	0			D. clouds	
Vandalia, Beirut, Syria	29.90	759.4	85	29 4	84	28.9	68	WNW			0–1		0							Blue sky	
Wabash, Boston, Mass	30.18	766.6	68	20.0	68	20.0	74	SW	12	5.4			0			0	0			Blue sky	
Wyoming, Washington, D. C	30.36†	771.1†	66	13.9	68	20.0		S			1		10							D. clouds	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio N. 24° 05′, E. 118° 35′					82	27.8		SSW			3		3		WSW	Smooth.	S	Cloudy	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 37° 22′, E. 162° 20′			29.87†	758.7†	74	23.3		WSW			6		k		W	Heavy	W	Overcast	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 49° 46′, W. 29° 50′	W ⅛S		30.27	768.8	67.5	19.7	67	NE			2		k			Smooth		Overcast	Capt. A. Jaeger.
S. S. Ohio N. 49° 43′, W. 7° 48′			30.35	770.9	59.0	15.0	76	E			1		k		E	Smooth		Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—Continued.

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

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Newport, R. I.			30.15	765.8	69	20.6	80	SSW	10	4.5		0	0					Clear	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 6, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.86	758.4	85.7	30.4	64	Calm			0		1			0.118	3.0	Clear	Michel.
Algiers			29.99	761.7	87.8	31.0	48	N			1		3			Inap.	Inap.	Fair	Peter.
La Calle			30.00	761.9	82.0	27.8	73	NE			3		7			0	0	Cloudy	Fleury.
Tunis			30.05	763.2	86.0	30.0		E			3		6			0	0	Fair	Jacques.
Sfax			30.12	765.0	86.0	30.0		E			4		6			0	0	Fair	Husson.
Saida			30.02	762.6	88.2	31.2		SW			4		2			0.079	2.0	Clear	Millot.
Tebessa			30.13	765.2	76.3	24.6		SSE			1		7			0.276	7.0	Cloudy	Bourgeois.
Geriville			29.95	760.8	76.3	24.6	57	SE			4		10			0.315	8.0	Hidden	Lemaillot.
Laghouat			30.10	764.5	87.8	31.0	48	E			4		4			Inap	Inap.	Fair	François.
Biskra			30.10	764.4	93.7	34.3	46	SE			1		8			0	0	Cloudy	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.62	752.3	30.16	766.0	69.3	20.7	44	SW			4		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.41	747.0	30.17	766.3	61.9	16.6	50	W			1		2			0	0		Dr. Wierzbiski.
Eperies	29.28	743.6	30.15	765.7	61.0	16.1	50	Calm			0		8c;s		S	0	0		Julius Mikolik.
Gratz	28.93	734.7	30.16	766.1	61.9	16.6	83	SW			3		0			0.134	3.4		Andreas Rospini.
Hermannstadt	28.70	728.9	30.10	764.4	63.9	17.7	59	NNE			3		5			0.549	13.95		Prof. Reissenberger.
Kremsmünster	28.70	728.9	30.02	762.4	61.2	16.2	67	ENE			3		0			0	0		Prof. C. Wagner.
Lemberg	29.14	740.2	30.12	765.1	59.0	15.0	66	NW			2		4			0	0		Dr. T. Stanecki.
Pola	30.02	762.6	30.13	765.4	71.6	22.0	44	NW			3		1cs			0	0		I.R.Hydrographic Office.
Szgathmar																			Johann Tamas, S. J.
Szegedin																			Karl Stancel.
Trieste	29.87	758.8	30.15	765.8	66.2	19.0	51	N			2		7			0	0		P. Busin.
Vienna	30.08	763.9	30.18	766.5	71.1	21.7	62	E			1		0			0	0		I. R. Central Met. Obs'y.
	29.43	747.6	30.12	765.0	66.6	19.2	79	SSE			2		0			0	0		

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.53	724.6	30.02	762.5	58.8	14.9	52	S			2		1			0.008	0.2		Royal Observatory.
Brussels	29.80	756.8	30.00	761.9	62.1	16.7	52	SW			1		7k		SE;S	0.089	2.25		
Furnes	29.95	760.8	29.98	761.4	66.6	19.2	56	SSW			2		4			0	0		
Maeseyck	29.80	759.2	30.02	762.5	59.9	15.5	86	SW			2		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.81	757.2	29.91	759.7	52.9	11.6		NNE	12	5.4			6			0.020	0.51	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	29.88	758.9	29.89	759.2	54	12.1		NE			3		7					D. clouds	William McNeil.
Armagh, Observatory			29.91	759.7	51.9	11.1		NNE	4	1.8			10					Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.93	760.2	56.6	13.7		W	11	4.9			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.91	759.7	56.9	13.8		SW			1		10					Drizzling	J. Dreyer.
Bradford, Yorkshire	29.52	749.8	29.91	759.7	58.1	14.5		W			2		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.97	761.2	63.0	17.2		WSW			1		7					D. clouds	H. Todd. [H. O
Cardington			29.98	761.5	64.0	17.8		W			1		7					Blue sky	John McLaren.
Chatham, School M. E	29.84	757.9	29.97	761.2	63.2	17.3		W			1		5					Blue sky	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.53	724.6	29.99	761.7	57.2	14.0		SE			1		5					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.85	758.2	29.88	758.9	55	12.8		NE			*4		10					Overcast	J. Mac Gowan.
Dover	29.94	760.5	29.97	761.2	61	16.1		SSW			2		5					½ clouded	J. Costello.
Eccles, (near Manchester)			29.92	760.0	56.0	13.3		W					10					Raining	Thomas Mackereth.
Falmouth, Observatory	29.75	755.6	29.98	761.5	57.6	14.2		E			1		9					Overcast	The Staff.
Fort Napier, (Natal)	27.78	705.6	29.98	761.5	87.3	30.7		NE			2		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.94	760.5	85.0	29.4		N			0		3					D. clouds	
Galway, Queen's College			29.84	757.9	58	14.4		W			1		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.86	758.4	29.90	759.4	79.9	26.6		SW			4		1					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.71	754.6	29.91	759.7	52.0	11.1		E			3		7					D. clouds	D. G. Maclean.
Great Yarmouth	29.95	760.7	29.95	760.7	60	15.6		W			3		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.80	756.9	29.97	761.2	62.0	16.7		SSW			1		5					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.72	754.9	29.94	760.5	62.5	16.9		ENE			1		3					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.00	762.0	62	16.7		NE			2		2c			0	0	Fine	M. P. Moyle.
Holyhead	29.90	759.4	29.92	760.0	59	15.0		SW			4		2					Blue sky	John Tilston.
Jersey	29.67	753.6	29.96	761.0	62.0	16.7		E			3		7					Gloomy	J. Fisher.
Kew, Observatory			29.98	761.5	62.0	16.7		WSW	5	2.2			5					D. clouds	The Staff.
Kingstown	29.91	759.7	29.94	760.5	60	15.6		SE			3		8					Overcast	George Mitchell.
Leicester, Museum			29.95	760.7	58.0	14.4		W			1		9					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.93	760.2	30.00	762.0	83.0	28.3		NE			1		4					D. clouds	Corp'l. P. Bravis, A. H. C.
Nairn	29.83	757.7	29.92	760.0	53	11.7		NW			1		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.04	763.0	84.0	28.9		NE			2		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.75	755.6	29.94	760.5	66.7	19.3		NW			3		7k;d		SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.42	747.3	29.94	760.5	56.1	13.4		SW			2		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.96	761.0	63	17.2		WSW			1		7					D. clouds	F. Lucas
Plymouth	29.89	759.2	29.97	761.2	59.0	15.0		E			1		10					Overcast	John Merrifield.
Roche's Point	29.91	759.7	29.95	760.7															W. Kennedy.
Saint Ann's Head	29.81	757.2	29.97	761.2	60	15.6		SW			1		5						John C. Walker.
Sandwick Manse, (Orkneys)			29.96	761.0	50.2	10.1		N	17	7.6			5					D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.92	760.0	76.6	24.8		NNE			2		9			Blank	Blank	Misty	Sergt. W. H. Lyne.
Sheffield	29.69	754.1	29.93	760.2	60.9	16.1		W			1		8			0.046	1.17	Overcast	W. F. Cooper.
Silloth Rectory	29.84	757.9	29.87	758.7	57.7	14.3	96	E			1		10			0.465	11.81	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					58.3	14.6		SW			2		10					D. clouds	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lewis C., (Hebr.)			29.96	761.0	51	10.6		NNE			2		5					D. clouds	John Smith.
Strathfield Turgiss	29.78	756.4	29.99	761.7	60.4	15.8		W			1		2					Blue sky	Rev. C. H. Griffith, F. M. S.
Thurso			29.93	760.2	56	13.3		N			4		4					D. clouds	John Trotter.
Truro, Royal Institution			29.98	761.5	64	17.8		E			2		5					D. clouds	W. Newcombe.
Valencia, Observatory			29.96	761.0	60.2	15.7		SW	16	7.2			5					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		W			4		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.92	760.0	29.96	761.0	78.0	25.6	68	ESE	6	2.7		6	8						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.84	757.9	53.0	11.7	82	NW			3		8k			0.04	1.0	Cloudy	Francis Abbott, F. R. A. S.
Leith, Restalrig Park			29.94	760.5	52.2	11.2		E			2		6k			0.04	1.0	Cloudy	Andrew Gibb.
Mauritius, Observatory	30.00	762.0	30.19	766.8	72.0	22.2	82	ESE	6.8	3.0		2	8	Calm	E	0	0	Dull	C. Meldrum.
Melbourne, Observatory	30.21	767.3	30.30	769.6	46.9	8.3	85	NE	3	1.3			0			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.99	761.7	53	11.7		NNE			4	5	5	N		0.6	1.5		J. Youngclause.
North Unst, (Shetland Is.)			29.92	760.0	49	9.4		NNW			6	2	5	NNW					Robert Burnet.

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

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 40° 42′, W. 69° 55′			30.16	766.1	70	21.1		NNE			2		8	SW	ESE	*2.5	SE	D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 45° 0′, W. 54° 55′			30.24	768.1	64	17.8		SSW			2		8			2		Overcast	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 49° 55′, W. 49° 50′			30.21	767.3	57	13.9		SW			3		10			0		Foggy	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.27	667.2			64.4	18.0	90	SE			2		c			Blank	Blank		Federico Maison.

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

DANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	29.79	756.7	29.84	757.9	57.2	14.0	81	SW			6		10					Raining	
Fanöe	29.79	756.7	29.81	757.2	59.2	15.1	78	W			6		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.95	760.7	29.98	761.6	51.3	10.7	68	N			2								
Vestervig	29.56	750.7	29.72	755.0	52.5	11.4	83	Calm			0		10					Raining	

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.41	747.1	29.97	761.1	60.8	16	52	ENE			2		1		W	0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.93	760.3	30.00	762.3	80.6	27	39	S			3		2		SE	0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.37	746.1	29.93	760.1	68.2	20.1	49	S			2		2			0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.69	754.1	29.97	761.2	61.7	16.5	53	E			1		2		E	0	0	Slightly cl'dy	Normal School.
Besançon	29.14	740.2	30.03	762.7	67.1	19.5	53	SW			2		2		SW	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.15	740.4	30.07	763.7	69.8	21	57	S			2	2c		S		0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.48	748.7	30.02	762.6	60.8	16	69	E			2		5		N	0.12	3.	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.0	29.83	757.6	63.1	17.3	44	NE			1		8		NE	0	0		The Staff.
Carcassonne, Normal School	29.54	750.3	29.95	760.6	68.2	20.1	87	W			6		8		W	0	0	Very cloudy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.70	754.4	30.01	762.3	69.1	20.6	51	SE			1		5k		SE	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.52	724.5	29.82	757.3	75.4	24.1	38	S			2		8			0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.14	740.1	30.00	762.1	61.5	16.4	69	NW			2		2		NW	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.94	735.1	30.08	764.1	79.9	26.6	28	E			4		2		E	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.61	752.1	29.91	759.8	64.0	17.8	55	E			3		5		E	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.07	738.4	29.95	760.9	69.6	20.9	55	SW			4		0			0	0	Clear.	Pin, Director.
Lorient, Naval Observatory	29.74	755.3	29.84	757.8	64.0	17.8	46	ENE			3		8		NE	0.039	1.0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.30	744.2	29.98	761.5	59.2	15.1	80	S			2		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.99	736.3	30.02	762.4	60.1	15.6	56	NW			1		2		SW	0	0	Slightly cl'dy	Normal School.
Nismes, Normal School	29.84	757.8	30.03	762.8	75.6	24.2	51	S			2		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.70	754.4	29.94	760.4	64.8	18.2	41	ESE			2	1c		W		0	0	Clear	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.78	756.4	29.81	757.2	68.0	20.0	58	E			3		8		E	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.87	758.8	29.96	761.0	66.0	18.9	45	NE			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	28.88	733.6	29.94	760.4	65.1	18.4	83	W			1		10		W	0	0	Covered	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.1	29.84	757.8	80.6	27										0.20	5.		L'Abbé Marchésl.
Marseilles, Observatory			30.01	762.2	77.0	25.0	33	SE			2-3		5			0	0		The Staff.
Mont-Louis	24.01	632.6	30.22	767.6	61.3	16.3	51	SSW	18.6	8.33			8		SW	0.319	8.1		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.66	753.3	29.93	760.3	68.0	20.0	39	E			2	3c		WSW		0	0		Marié Davy, Director.
Perpignan			29.97	761.1	70.7	21.5	72	SE	24.2	10.83			10			0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P.	21.32	541.6			41.0	5.0		SW			4		10					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.55	572.7			45.5	7.5		SW			4-6		10			0.110	2.8	Raining	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.77	756.1	29.93	760.3	67.6	19.8	41	ENE			1		0			0.102	2.6	Clear	E. Renou.
Toulouse, Observatory	29.19	741.3	29.91	759.6	69.6	20.9	59	SSE			6		9			0	0		The Staff.
Tours	29.69	754.0	29.88	759.0	68.0	20.0	47	ESE			1		10		W	0	0		C. Marquet.
Versailles, (near Paris)			29.94	760.5	67.3	19.6	37	SE			1		4			0.004	0.11	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.91	759.8	29.94	760.4	71.4	21.9	96	Calm	0	0			10n			0.047	1.2	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. T. Hoh.
Berlin	29.90	759.4	30.07	763.8	63.7	17.6	52	S			6					0	0		Prof. Arndt.
Breslau	29 63	752.5	30.16	766.1	66.0	18.9	40	SSE			2		7			0	0		Royal University Obs'y.
Carlsruhe	29.58	751.3	30.00	761.9	63.9	17.7	60	SE			1		0			0	0		Albert Senz.
Cassel	29.54	750.4	30.15	765.9	61.7	16.5	56	SE			2		3	SW		0	0		Dr. H. Möhl.
Crefeld	29.85	758.2	30.01	762.3	64.4	18.0	51	S			4		5k			0	0		Director Lose.
Emden	29.93	760.2	29.97	761.1	61.0	16.1	62	W			6		4			0	0		Prof. Prestel.
Frankfort on the Main	29.74	755.5	30.11	764.8	62.8	17.1	39	E			1		4			0.020	0.5		Physical Society.
Friedrichshafen	28.64	727.4	30.07	763.6	57.2	14.0	83	SSW			2		1	SW		0.134	3.4	Raining	M. Wilhelm.
Hamburg	29.93	760.2	30.00	762.0	60.6	15.9	76	WSW			4		7k			0.087	2.2	Fair	Captain F. Hegemann.
Kiel	29.91	759.6	29.92	760.0	61.3	16.3	64	SW			3		8			0.022	0.56		Prof. G. Karsten.
Königsberg, (Prussia)	29.97	761.2	30.05	763.3	57.6	14.2	62	SW			2								Prof. E. Luther.
Köslin			30.05	763.3	60.8	16.0		S			2		1			0	0		H. Müller.
Leipsic, Observatory	29.70	754.3	30.11	764.8	64.0	17.8	50	SSW			1		6	SW		0	0		Prof. Bruhns.
Memel, Naval School	30.06	763.5	30.11	764.7	57.0	13.9	75	SW			4		5n						Reinbrecht von Skalweit.
Neufahrwasser	30.03	762.8	30.05	763.2	63.0	17.2	46	SW			4		6			0.248	6.3		A. Lothes.
Posen	29.88	758.9	30.16	766.1	64.0	17.8	45	W			6–7		2			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.49	749.0	30.04	762.9	59.0	15.0	70	E			2		1			0	0		Dr. Schur.
Stuttgart	29.06	738.1	30.00	761.9	63.3	17.4	56	E			1		0			0.091	2.3		Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.56	725.5	30.00	762.0	61.7	16 5	50	SSE			1		3	SE		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.01	762.2	30.06	763.5	61.2	16.2	60	SW			4		10			Blank	Blank		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.49	749.0	29.84	757.8	93.6	34.2		NE										Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.60	751.8	29.65	753.0	82.6	28.1	77	WSW	25.0?	11.2?			7			0	0	D. clouds	
Deesa																			
Bombay	29.69	754.1	29.73	755.1	83.2	28.4	77	WNW	10.0	4.5			5		NNW	0.03	0.8	Misty	
Poona	27.66	702.6	29.65	753.0	80.4	26.9	78	W					10		NW	0	0	D. clouds	
Lahore	28.81	731.8	29.53	752.6	92.1	33.4	82	SW	1.3	0.6			6	S		0	0	Cloudy	
Belgaum	27.23	691.6	29.77	756.1	74.3	23.5	89	W	1.0	0.4			10		WNW	0.04	1.0	Showery	
Bangalore																			
Roorkee	28.66	728.0	29.52	749.9	95.2	35.1	43	NW	3.2	1.4			2			0	0		
Agra	28.98	736.2	29.52	749.9	99.2	37.3		W					3			0	0		
Trichinopoly																			
Nagpur	28.60	726.5	29.63	752.6	84.6	29.2	78	Calm	2.9	1.3			9			0.13	3.3	Gloomy	
Madras																			
Lucknow	29.18	741.2	29.54	750.4	94.3	34.6	54	W	3.8	1.7			10		E	0	0	Overcast	
Allahabad	29.27	743.5	29.58	751.2	89.1	31.7	75	ENE	4.7	2.1			9		E	0	0	Thunder	
Patna	29.48	748.8	29.66	753.3	79.7	26.5	91	W	1.5	0.7			10	W	W	0.59	15.0	Overcast	
Hazaribagh	27.67	702.7	29.67	753.6	78.0	25.6	84	Calm	7.4	3.3			10		E	0.15	3.8	Thunder-storm	
Cuttack	29.48	748.8	29.56	750.9	81.2	27.3	86	NNE	6.6	3.0			10			0.56	14.2	Overcast	
Calcutta (Alipore)	29.63	752.5	29.65	753.1	79.6	26.4	93	WSW	7.0	3.1			10		S	0.24	6.1	Raining	
Goalpara	29.29	744.0	29.68	753.9	78.4	25.8	93	Calm	2.8	1.2			3	WSW		1.72	43.7	D. clouds	
Chittagong	29.63	752.6	29.72	755.0	82.9	28.3	80	ESE	19.1	8.5			10			0	0	Gloomy	
Sibsagar	29.38	746.4	29.72	754.8	85.2	29.6	79	NNE	1.4	0.6			10			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.33	732.2	29.66	753.4	88.3	31.3	61	NW	3.5	1.6			9	NW	NW	0.01	0.3	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.32	567.0	30.02	762.5	44.8	7.1	85	W			1		10			0	0		Ab. Dom. Morgini.
Stelvio	22.20	566.2	29.99	761.8	43.2	6.2		WSW			2		2	SSE		0	0		Signora Ernesta Manfredi.
Udine	29.72	755.0	30.12	765.1	68.4	20.2	38	S	1.3	0.6			3			0.433	11.0		Prof. Giovanni Clodig.
Padua	30.03	762.7	30.13	765.4	70.2	21.2	40	SE	4.3	1.9			3	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.95	760.6	30.13	765.3	73.6	23.1	37	SW	3.8	1.7			1	W		0	0		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.84	732.4	30.11	764.7	70.5	21.4	42	SW			1		4			0	0		Prof. Trionfini Carlo.
Domodossola	29.12	739.7	30.11	764.8	64.9	18.3	56	S			4		9			0	0		Prof. Giuseppe Calza.
Milan	29.64	752.9	30.13	765.4	78.1	25.6	50	ENE			2		1	E		0	0		Ab. Gio. Capelli.
Pavia	29.78	756.5	30.11	764.9	71.1	21.7	47	NE			4		1			0	0		Prof. Gio. Cantoni.
Moncalieri	29.23	742.5	30.10	764.6	69.8	21.0	43	ENE	1.8	0.8			2			0	0		Prof. P. F. Denza.
Mondovi	28.24	717.3	30.07	763.8	66.9	19.4	51	NNW			4		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.86	758.5	30.08	764.0	72.9	22.7	47	E			8		4	W		0	0		Prof. L. Vassallo.
Genoa	29.91	759.8	30.08	763.9	81.5	27.5	29	W	3.8	1.7			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.87	758.6	30.11	764.9	72.3	22.4	36	SW			2		2			0	0		Dott. G Manzi.
Parma	29.78	756.4	30.09	764.3	75.0	23.9	56	SE			2		0			0	0		Prof. P. Pigorini.
Florence	29.85	758.2	30.10	764.4	79.2	26.2	26	SE			2		1	WSW		0	0		Cav. F Meucci.
Leghorn	29.96	760.9	30.04	763.0	80.1	26.7	22	E	6.3	2.8			1			0	0		Prof. P. Monte.
Siena	28.90	734.1	30.07	763.7	75.6	24.2	25	E	1.3	0.6			4	W		0	0		Prof. L. Toscani.
Urbino	28.64	727.4	30.13	765.3	65.5	18.6	47	NE			2		3			0	0		Prof. P. Serpieri.
Pesaro	30.10	764.5	30.23*	767.7*	70.7	21.5	64	N	16.1	7.2			0			0	0		Prof. Luigi Guidi.
Ancona	30.02	762.5	30.12	765.1	73.8	23.2	45	NNW			4		1			0	0		Prof. F. DeBosis.
Grosseto	29.96	760.9	30.07	763.6	83.8	28.8	63	N			4		2			0	0		Avv. P. Ponticelli.
Rome	29.89	759.2	30.06	763.5	82.9	28.3	31	W	3.8	1.7			6			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.87	758.6	30.06	763.5	83.5	28.6	33	WSW			2		8	W		0	0		Prof. L. Palmieri.
Lecce	29.80	757.0	30.04	763.1	78.1	25.6	42	NNW	31.1	13.9			0			0	0		Prof. C. DeGiorgi.
Cosenza	29.20	741.6	30.04	762.9	82.9	28.3	40	NNE	3.1	1.4			3	WNW		0	0		Prof. F. D. Conti.
Cagliari	29.77	756.1	29.95	760.7	82.0	27.8	58	SE			4		9	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.91	759.7	29.96	760.9	82.4	28.0	67	SE			2		8	SE		0	0		Prof. F. Cafiero.
Palermo	29.76	755.8	30.00	761.0	79.3	26.3	51	ENE	5.6	2.5			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.11	713.9	29.95	760.6	77.4	25.2	26	SSW			4		7	NE		0	0		Prof. A. Pagani.
Syracuse	29.90	759.5	29.98	761.4	81.5	27.5	69	E					8	WNW		0	0		Prof. V. Giuliano.
Sun-Series.																			
Naples, S. R.	29.52	749.9	30.08	764.0	81.0	27.2	39	WNW	2.5	1.1			5	WNW		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,549.0 meters, or 8,342.9 feet; Valdobbia, 2,648.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.86	758.4	29.94	760.5	66.8	19.3	93	N	5.4	2.4			10n			1.10	27.9	Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.07	585.9	30.65	763.2	59.0	15.0	90	Calm	0	0		1c	7k	NE		0.59	15.0	Cloudy	Mariano Bárcena Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	30.02	762.4	30.02	762.4	63.7	17.6		WSW			2					0	0		
Groningen	29.92	760.0	29.98	761.4	59.2	15.1		W			2					0	0		
Helder	29.96	760.9	29.96	760.9	60.8	16.0		WSW			4					0	0		
Utrecht	29.97	761.2	30.02	762.4	63.5	17.5	57	SSW			4		5			0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.65	753.0	29.70	754.4	53.2	11.8	67	NW	16.3	7.3			3			0	0		
Brönö	29.67	753.6	29.71	754.6	50.0	10.0	60	SW	9	4			6			0	0		
Christiania	29.45	748.1	29.60	751.7	57.4	14.1	93	SSW	9	4			3			0	0		
Tromsö	29.63	754.0	29.73	755.1	46.8	8.2	78	Calm	0	0			2			0	0		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.93	760.1	30.11	764.9	67.8	19.9	70	NE	10.5	4.7			4			0.157	4.0		Dr. J. A. Sampaio.
Campo Major	28.90	734.0	29.89	759.2	77.5	25.3	47	SSW	10.5	4.7			8	SSW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.71	754.5	29.79	756.7	74.7	23.7	72	WSW	8.1	3.6			6			1.295	32.9	Raining	Capt. D. A. de Cunha.
Lisbon, Observatory	29.49	749.1	29.84	758.0	71.4	21.9	69	SW	16.1	7.2			7			0.024	0.6		The Staff.
Ponta Delgada, (Azores)	29.98	761.4	30.05	763.2	69.4	20.8	61	NNE	9.4	4.2			4	WNW		0.276	7.0		

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

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

RUSSIAN SERIES.

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

Warsaw	29.73	755.1	30.15	765.7	59.9	15.5	48	WNW	7	3			8						Astronomical Obs.
Wilna	29.65	753.0	30.06	763.5	59.0	15.0	60	W	2	1			2						Astronomical Obs.
Dorpat	29.70	754.4	29.94	760.5	53.6	12.0	83	SW	7	3			7					Raining	Physical Cabinet.
St. Petersburg	29.91	759.8	29.93	760.2	55.2	12.9	61	NW	7	3			7						Central Physical Obs
Kuopio	29.51	749.6	29.83	757.6	50.0	10.0	89	W	7	3			10					Raining	Ch. Forsten.
Kieff	29.42	747.3	30.05	763.3	59.7	15.4	54	N	4	2			9						Physical Cabinet.
Nikolaiev	30.04	762.9	30.11	764.7	59.0	15.0	67	N	4	2			8						Kurdakof.
Kertch	29.69	759.3	29.91	759.8	72.1	22.3	80	N	4	2			10						Lagorio.
Moscow	29.45	748.1	30.00	762.1	54.7	12.6	52	N	9	4			6						Meteorological Obs.
Lugan	29.68	753.8	29.88	758.9	57.2	14.0	92	N	13	6			10			Blank	Blank		Meteorological Obs.
Archangel	29.90	759.4	29.92	759.9	49.8	9.9	74	NNW	7	3			8						Ogorodnikof.
Tiflis	28.42	721.9	29.73	755.2	92.5	33.6	25	SE	9	4			3						Physical Observatory.
Astrakhan	29.91	759.7	29.83	757.6	86.7	30.4	46	SE	11	5			1						Sebastianof.
Kasan	29.37	746.0	29.63	752.7	59.2	15.1	64	WSW	13	6			9						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	28.78	731.1	29.71	754.6	58.3	14.6	64	SSE	7	3			10						Meteorological Obs.
Nukuss	29.63	752.6	29.85	758.2	86.4	30.2	45	NNE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.28	718.4	29.92	760.0	73.2	22.9	81	Calm	0	0			0						Michelson.
Barnaul	29.45	748.1	29.97	761.1	58.5	14.7	70	Calm	0	0			4						Meteorological Obs.
Yeniseisk	29.46	748.2	29.60	751.9	50.7	10.4	87	SW	9	4			7			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.75	755.6	29.89	759.2	71.2	21.8	66	NE	18	8			10					Thunder-storm	Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					41.9	5.5	93	Calm	0	0			0						

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.69	703.4			76.1	24.5	59	W	25.4	11.33		0	7			0.937	23.8	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.5	30.06	763.6	82.5	28.1	82	Calm	0	0		0	1k			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.86	758.3	29.95	760.8	75.9	24.4	60	SW	9.6	4.3		0	3		WSW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.91	759.6	81.3	27.4	91	SE				2k	1kn	SE	SE	0.167	4.25	D. clouds	Leonardo de Tejedu, Chief of Engineers.

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

SWEDISH SERIES.

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

Haparanda	29.79	756.7	29.83	757.7	51.1	10.6	77	S			2		3			0	0		
Umea	29.71	754.5	29.76	755.8	50.0	10.0	84	SSE			2		10			0	0		
Hernosand	29.62	752.3	29.67	753.6	52.5	11.4	86	S			2		8			0.173	4.4	Raining	
Stockholm	29.49	749.0	29.67	753.5	52.9	11.6	80	S			2		10			0	0		
Wisby	29.70	754.4	29.76	755.9	55.8	13.2	75	SW			7		7			0	0		
Sub-Series.																			
Upsala	29.59	751.5	29.66	753.4	53.6	12.0	79	S	11.6	5.2			10			0.089	2.26	Raining	Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.61	726.8	30.02	762.5	61.7	16.5	56	N			1		3			0	0	Cloudy	The Observatory.
Zurich	28.44	722.4	30.05	763.3	62.2	16.8	68	W			1		1			0.059	1.5	Clear	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —0.5 mm; Thermometer, —3.0 cent.; Relative Humidity, —4 per cent.

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

TURKISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			30.08	764.1	70.2	21.2	76	N	30	13.5			9		N	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.04	763.0	81.7	27.6		NE			1		5						B. Stefanidès.
Valona			30.12	765.1	78.8	26.0		NW			2		0			0	0	Clear	A. Bertrand.
Varna			29.96	761.0	64.4	18.0		NE			2		5						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.67	753.6	29.78	756.4	93.6	34.2	57	SW			3		1s		SW			D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.			30.32	770.1	57	13.9		NE	8	3.6		0	0			0.58	14.7	Clear	Hon. J. Ferguson.
Brockville, Ontario			30.28	769.1	52	11.1	72	N	10	4.5		0	0			1.25	31.7	Clear	W. R. Bigg.
*Chatham, N. B.			30.24	768.1	56	13.3	93	N	6	2.7			10s		Calm	0.390	9.91	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.14	765.5	30.33	770.4	50.0	10.0	94	N			2	0	1s			0.299	7.60	Clearing	H. J. Cundall, C. E.
Cornwall, Ontario	30.32	770.1	30.30	771.1	48.8	9.3	80	W			2					0.33	8.4	Bright	James Smith, M. A.
Dalhousie, N. B.	29.97	761.2	30.12	765.0	57.2	14.0	94	SW				3cs	0			0	0	Cloudy	H. A. Johnson.
Esquimault, B. C.			30.39	771.9	46	7.8	84	SW	5	2.2		0	0			0.13	3.3	Clear	W. H. Bevis.
*Father Point, Quebec	30.23	767.8	30.30	769.6	54.2	12.3	66	NE	6	2.7		cs	0			0.30	7.6	Fair	J. McWilliams.
*Fredericton, N. B.			30.09	764.3	50	10.0	93	S	12	5.4		0	0			0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	29.49	749.0	30.28	769.1	55.9	13.3	77	E			2	1k	1s	NW		Inap.	Inap.	Fair	James Stewart.
Goderich, Ontario	29.15	740.4	30.24	768.1	55	12.8	74	NE			1	1cs	0	W		0	0	Clear	H. J. Strang, M. A.
Granton, Ontario	30.05	763.3	30.18	766.6	63	17.2	91	NW	5	2.2			8ks			0	0	Cloudy	James Grant.
*Halifax, N. S.	29.93	760.2	30.30	769.6	56.9	13.8	61	NE			5	4c	0	W		0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	30.20	767 1	30.22	767.6	59	15.0	82	SW			4	3k	4ks	SW	SW	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.98	761.5	30.34	770.6	58	14.4	81	NE	18	8.0		2k	0	NE		0.59	15.0	Clear	E. Weedon.
*Kingston, Ontario	30.16	766.1	30.37	771.4	53	11.7	86	NE	10	4.5		0	0			0.19	4.8	Clear	S. Woods, M. A.
*Montreal, Quebec	29.67	753.6	30.38	771.6	47	8.3	77	NE	10	4.5		0	0			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.58	751.3	30.34	770.6	53.7	12.1	83	N			1	2k	0			0.23	5.8	Fair	Rev. R. Mosley
Peterboro, Ontario	29.54	750.3	30.23	767.8	56	13.3	75	NE	14	6.3		10k	0	NE		0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	30.14	765 5	30.19	766.8	64.7	18.2		NW			3					0	0	Fine	H. Morgan.
Port Hastings, N. S.	29.58	751.3	30.22	767.6	57	13.9	86	NE	8	3.6			10n		E	0.01	0.3	Cloudy	Peter Grant
Port Stanley, Ontario	30.09	764.3	30.41	772.4	50	10.0	79	NE	3	1.3		0	0			0.28	7.1	Clear	M. Payne.
*Quebec, Quebec	29.95	760.7	30.42	772.7	42	5.6	98	W	4	1.8			Fog		Calm	0	0	Foggy	Capt. Ashe, R. N.
*Rockliffe, Ontario	30.13	765.3	30.30	769.6	53	11.7	93	N	7	3.1		7k	0			0.14	3.6		W. H. McIntyre.
St. John, N. B.	29.57	751.1	30.27	768.8	56	13.3	81	Calm	0	0		0	0			0.04	1.0	Clear	G. Murdock, C. E.
*Saugeen, Ontario			30.32	770.1	55	12.8	68	Calm	0	0		0	0			0.06	1.5	Clear	K. Stewart.
Stayner, Ontario	28.99	736.3	30.27	768.8	53.0	11.7	72	E	10	4.5		3cs	0	E		0	0	Fair	R. J. Cole.
Stratford, Ontario	30.16	766.1	30.19	766.8	69	20.6	77	SW	10	4.5		2ck	2ks	W	W	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.93	760.2	30.31	769.9	56	13.3	56	NE	8	3.6		2k	2s	N	N	0.20	5.1	Fair	T. C. Hill.
*Toronto, Ontario																			Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					66.0	18.9	68	W				2k	5s			0	0	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.00	762.0	30.23	767.8	57	13.9	81	NW	8	3.6			10s		Calm	Inap.	Inap.	Cloudy	
Alpena, Michigan	29.66	753.4	30.31	769.9	57	13.9	57	NE	11	4.9		2ck	0	NE		0	0	Fair	
Atlantic City, New Jersey	30.14	765.5	30.16	766.1	60	15.6	95	Calm	0	0			10n		W	Inap.	Inap.	Light rain	
Augusta, Georgia	29.94	760.5	30.12	765.0	77	25.0	82	SE	1	0.4		0	0			0.14	3.6	Clear	
Baltimore, Maryland	30.11	764.8	30.16	766.1	67	19.4	90	W	4	1.8			10n		SW	0.02	0.5	Light rain	
Barnegat, New Jersey	30.14	765.5	30.16	766.1	70	21.1	95	Calm	0	0			10s; fg	SW; Calm		Inap.	Inap.	Cloudy	
Bismarck, Dakota	28.12	714.2	29.72	754.9	59	15.0	76	SE	5	2.2		Haze	2s		W	0	0	Hazy	
Boise City, Idaho	27.12	688.8	29.69	754.1	51	10.6	78	SW	1	0.4		5ck	2s	Calm	Calm	0	0	Fair	
Boston, Massachusetts	30.08	764.0	30.24	768.1	61	16.1	82	NE	16	7.2			10s		NE	0	0	Cloudy	
Brackettville, Texas	28.89	733.8	29.88	758.9	75	23.9	72	Calm	0	0		10cs	0	W		0	0	Cloudy	
Breckenridge, Minnesota	29.11	739.4	30.11	764.8	48	8.9	92	SE	13	5.8		0	2ks		Calm	0	0	Fair	
Brownsville, Texas	29.92	760.0	29.98	761.5	78	25.6	82	S	12	5.4			10s		SE	0.45	11.4	Cloudy	
Buffalo, New York	29.52	749.8	30.23	767.8	58	14.4	81	E	8	3.6			10s		E	0	0	Cloudy	
Burlington, Vermont	30.05	763.3	30.32	770.1	52	11.1	86	N	6	2.7		0	0			0.83	21.1	Clear	
Cairo, Illinois	29.74	755.4	30.12	765.0	64	17.8	89	N	12	5.4			10ks		N	0.14	3.6	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.75	679.4	30.25	768.3	63	17.2	57	Calm				0	0			0	0	Clear	
Campo, California	27.31	693.7	29.88	758.9	52	11.1	73	E	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.06	763.5	30.06	763.5	77	25.0	72	E	2	0.9		10k	0	SW		0	0	Cloudy	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	72	22.2	71	NE	2	0.9			10s		E	Inap.	Inap.	Cloudy	
Cape Lookout, N. Carolina	30.11	764.8	30.12	765.0	78	25.6	82	E	12	5.4		8k	2s	SW	Calm	0	0	Cloudy	
Cape May, New Jersey	30.12	765.0	30.15	765.8	70	21.1	85	S	6	2.7			10n		S	0.01	0.3	Light rain	
Charleston, South Carolina	30.07	763.8	30.13	765.3	79	26.1	86	W	2	0.9		2cs	Sm'e	W	Calm	0	0	Fair	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	53	11.7	68	SW	8	3.6		5ck	2s	W	Calm	0	0	Fair	
Chicago, Illinois	29.45	748.0	30.12	765.0	64	17.8	89	NE	10	4.5			10s		NE	0	0	Threatening	
Cincinnati, Ohio	29.38	746.2	30.01	762.2	63	17.2	88	NE	6	2.7			10n		NE	0.25	6.3	Light rain	
Cleveland, Ohio	29.44	747.8	30.15	765.8	64	17.8	73	NE	8	3.6			10s		Calm	0	0	Cloudy	
Concho, Texas	28.68	713.9	29.73	755.1	62	16.7	88	NE	4	1.8		0				0	0	Clear	
Corsicana, Texas	29.59	751.6	30.05	763.3	68	20.0	94	N	6	2.7			10s		Calm	0.14	3.6	Cloudy	
Davenport, Iowa	29.56	750.8	30.19	766.8	60	15.6	82	NE	4	1.8			10s		Calm	0	0	Cloudy	
Denison, Texas	29.31	744.5	30.10	764.5	66	18.9	94	NW	2	0.9			10s		N	0.15	3.8	Cloudy	
Denver, Colorado	24.83	630.7	30.16	766.1	52	11.1	65	S	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.51	749.5	30.18	766.6	58	14.4	87	NE	9	4.0			10s		NE	0.12	3.0	Cloudy	
Dodge City, Kansas	27.48	698.0	29.74	755.4	57	13.9	87	E	2	0.9		0	Haze		Calm	0	0	Clear	
Dubuque, Iowa	29.51	749.5	30.21	767.3	59	15.0	76	E	3	1.3		10k	0	E		0	0	Cloudy	
Duluth, Minnesota	29.59	751.6	30.28	769.1	53	11.7	79	NE	1	0.4		0	0			0	0	Clear	
Eagle Pass, Texas	29.23	742.4	29.94	760.5	77	25.0	77	E	1	0.4			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.20	767.1	30.26	768.6	55	12.8	74	N	2	0.9		8k	2s	NW	N	0.22	5.6	Cloudy	
Erie, Pennsylvania	29.45	748.0	30.16	766.1	60	15.6	88	NE	9	4.0			10s			0	0	Cloudy	
Escanaba, Michigan	29.67	753.6	30.33	770.4	46	7.8	77	N	8	3.6		0	0			0	0	Clear	
Florence, Arizona	28.30	718.8	29.90	759.4	85	29.4	29	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.17	613.9	30.17	766.3	56	13.3	68	NE	7	3.1		0	0			0	0	Clear	
Fort Craig, New Mexico	25.63	651.0			58	14.4	81	E	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.54	750.3	30.07	763.8	65	18.3	100	N	5	2.2			10n		N	0.33	8.4	Light rain	
Fort Griffin, Texas	28.85	732.8	30.11	764.8	60	15.6	70	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.89	733.8	30.00	762.0	56	13.3	93	NW	4	1.8			Fog		Calm	0.03	0.8	Foggy	
Fort Sully, Dakota	28.25	717.5	29.86	758.4	60	15.6	76	SE	16	7.2		0	0			0	0	Clear	
Galveston, Texas	29.98	761.5	30.02	762.5	78	25.6	86	SW	1	0.4			10s		S	3.22	81.8	Threatening	
Grand Haven, Michigan	29.58	751.3	30.23	767.8	54	12.2	79	SE	12	5.4		1cs	4ks	SE	SE	0	0	Fair	
Indianapolis, Indiana	29.33	745.0	30.10	764.5	63	17.2	88	NE	4	1.8			10n		Calm	0.10	2.5	Light rain	
Indianola, Texas	29.98	761.5	30.01	762.2	76	24.4	95	SW	8	3.6			10n		Calm	1.54	39.1	Light rain	
Jacksboro, Texas																			
Jacksonville, Florida	30.09	764.3	30.11	764.8	80	26.7	74	NE	1	0.4		0	0			0	0	Clear	
Keokuk, Iowa	29.51	749.5	30.12	765.0	63	17.2	88	Calm	0	0		0	5s		Calm	0	0	Fair	
Key West, Florida	30.01	762.2	30.05	763.3	84.5	29.2	71	NE	9	4.0		1k	1ks	NE	Calm	0.15	3.8	Clear	
Kittyhawk, North Carolina	30.12	765.0	30.15	765.8	75	23.9	69	E	9	4.0			10s		W	0	0	Cloudy	
Knoxville, Tennessee	29.06	738.1	30.04	763.0	66	18.9	94	Calm	0	0			Fog		Calm	0.96	24.4	Dense fog	
La Crosse, Wisconsin	29.48	748.8	30.22	767.6	55	12.8	73	NE	5	2.2			10s		NE	0	0	Cloudy	
La Mesilla, New Mexico	26.15	664.2	30.39	769.6	63	17.2	72	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					75	25.6	86	NE	4	1.8			10n		NE	0.05	1.3	Light rain	
Leavenworth, Kansas	29.29	744.0	30.12	765.0	61	16.1	94	NE	3	1.3			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.53	750.0	29.83	758.4	63	17.2	94	SW	2	0.9			Fog			0	0	Foggy	
Louisville, Kentucky	29.50	749.3	30.04	763.0	63	17.2	94	NE	11	4.9			10s		NE	0.39	9.9	Cloudy	
Lynchburg, Virginia	29.44	747.8	30.10	764.5	69	20.6	79	S	2	0.9			10s		Calm	0.79	20.1	Cloudy	
Maricopa Wells, Arizona					71	21.7	67	S				0	0			0	0	Clear	
Marquette, Michigan	29.60	751.8	30.31	769.9	47	8.3	62	NW	8	3.6		0	0			0	0	Clear	
Mason, Texas	28.49	723.6	30.23	767.8	70	21.1	80	NE	3	1.3			10s			0.13	3.3	Cloudy	
Memphis, Tennessee	29.78	756.4	30.09	764.3	67	19.4	94	N	4	1.8			10s		N	0.35	8.9	Cloudy	
Milwaukee, Wisconsin	29.56	750.8	30.24	768.1	61	16.1	70	E	16	7.2		0	5ks		SE	0	0	Fair	
Mobile, Alabama	30.06	763.5	30.10	764.5	80	26.7	86	S	4	1.8		5c	1ks	W	Calm	0.60	15.2	Fair	
Montgomery, Alabama	29.88	758.9	30.10	764.5	76	24.4	86	SE	3	1.3		2c	Haze	W	Calm	0.06	1.5	Fair	
Morgantown, West Virginia	29.04	737.6	30.07	763.8	63	17.2	88	Calm	0	0			4n		NW	0.14	3.6	Light rain	
Mt. Washington, N. H.	24.06	611.1	30.42	772.7	40	4.4	100	NW	7	3.1			Fog		NW	0.02	0.5	Foggy	
Nashville, Tennessee	29.53	750.0	30.05	763.3	69	20.6	95	NW	2	0.9			10n		NW	0.25	6.3	Light rain	
New Haven, Connecticut	30.06	763.5	30.18	766.6	66	18.9	84	N	12	5.4		10ck	0	Calm		0	0	Cloudy	
New London, Connecticut	30.14	765.5	30.19	766.8	70	21.1	75	NE	2	0.9		6c;ck	Fog	E; W	Calm	0	0	Fair	
New Orleans, Louisiana	30.00	762.0	30.06	763.5	79.5	26.4	88	SE	1	0.4		9c;ck	0	SW; S		1.45	36.8	Cloudy	
Newport, Rhode Island	30.14	765.5	30.18	766.6	68	20.0	84	N	4	1.8			10ks		N	0	0	Cloudy	
New York, New York	30.00	762.0	30.17	766.3	70	21.1	75	NE	5	2.2		5k	Fog	S	Calm	0	0	Foggy	
Norfolk, Virginia	30.10	764.5	30.16	766.1	68	20.0	94	SE	6	2.7			10n		Calm	0.03	0.8	Light rain	
North Platte, Nebraska	27.16	689.8	29.68	753.9	57	13.9	81	SE	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.98	761.5	30.02	762.5	51	10.6	86	S	2	0.9			10ks		SW	0	0	Cloudy	
Omaha, Nebraska	28.99	736.3	30.05	763.3	61	16.1	88	S	1	0.4		2ck	Sm'e	NW		0.02	0.5	Clear	
Oswego, New York	29.93	760.2	30.25	768.3	60	15.6	85	NE	2	0.9		8k	0	W		0	0	Cloudy	
Pembina, Dakota	29.27	743.4	30.09	764.3	49	9.4	86	SE	12	5.4		0	0			0	0	Clear	
Philadelphia, Pennsylvania	30.10	764.5	30.16	766.1	68	20.0	90	Calm	0	0			10n; fr		Calm	Inap.	Inap.	Light rain	
Phœnix, Arizona					73	22.8	38	E				0	0			0	0	Clear	
Pike's Peak, Colorado	18.04	458.2	30.24	768.1	28.5	1.9	72	NW	12	5.4		0	0			Inap.	Inap.	Clear	
Pioche, Nevada	24.03	610.4	29.80	756.9	60	15.6	24	S	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.39	744.2	30.10	764.5	61	16.1	88	E	3	1.3			10n		E	0.06	1.5	Light rain	
Port Huron, Michigan	29.54	750.3	30.20	767.1	58	14.4	75	NE	10	4.5		2c	5ks	NE	E	0	0	Cloudy	
Portland, Maine	30.22	767.6	30.26	768.6	58	14.4	69	NE	20	8.9		2k	Haze	W		0	0	Fair	
Portland, Oregon	30.06	763.5	30.15	765.8	55	12.8	86	SE	2	0.9			10s		Calm	0	0	Cloudy	
Prescott, Arizona					67	19.4	41	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	81	27.2	74	E	4	1.8		0	0			0.39	9.9	Clear	
Red Bluff, California	29.41	747.0	29.76	755.9	67	19.4	49	Calm	0	0		0	0			0	0	Clear	
Rochester, New York	29.62	752.3	30.22	767.6	60	15.6	82	NE	7	3.1			10s		NE	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.55	750.6	30.11	764.8	56	13.3	77	NW	5	2.2		0	2s		Calm	0	0	Fair	
Sacramento, California	29.73	755.1	29.81	757.2	57	13.9	69	S	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.57	751.1	30.14	765.5	62	16.7	83	N	4	1.8			10s		Calm	0.16	4.1	Cloudy	
St. Marks, Florida	30.09	764.3	30.11	764.8	75	23.9	95	Calm	0	0		8c	0	W		0	0	Fair	
St. Paul, Minnesota	29.35	745.5	30.16	766.1	63	17.2	57	E	6	2.7		5c	2s	S	Calm	0	0	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.52	648.2	29.85	758.2	68	20.0	34	NE	2	0.9			10s		Calm	0	0	Cloudy	
San Antonio, Texas	29.33	745.0	29.89	759.2	72	22.2	90	Calm	0	0			10n		N	0.78	19.8	Drizzling	
San Diego, California	29.81	757.2	29.88	758.9	64	17.8	89	N	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.48	748.8	30.14	765.5	66	18.9	84	NE	28	12.5		4c	7ks	SW	NE	0	0	Cloudy	
Sandy Hook, New Jersey	30.14	765.5	30.16	766.1	68	20.0	90	NE	7	3.1		10ck	Haze	W		0	0	Cloudy	
San Francisco, California	29.78	756.4	29.85	758.2	56	13.3	87	S	8	3.6			10s		Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.41	594.6	29.95	760.7	52	11.1	59	E	11	4.9		0	Haze			0	0	Clear	
Savannah, Georgia	30.05	763.3	30.14	765.5	77	25.0	82	Calm	0	0		2ck	Sm'e	NE		0	0	Fair	
Shreveport, Louisiana	29.83	757.7	30.04	763.0	71	21.7	100	N	3	1.3			Fog			0.51	13.0	Foggy	
Smithville, North Carolina	30.10	764.5	30.14	765.5	78	25.6	86	SE	1	0.4		5c	0	W		0.03	0.8	Fair	
Springfield, Massachusetts	30.03	762.7	30.16	766.1	64	17.8	78	N	7	3.1		9ck	0	NW		0	0	Fair	
Stanwix, Arizona																			
Stockton, Texas					66	18.9	90	Calm	0	0			10s		E	0.06	1.5	Cloudy	
Thatcher's Island, Mass	30.17	766.3	30.23	767.8	60	15.6	94	NE	24	10.7			10s		NE	0	0	Foggy	
Toledo, Ohio	29.50	749.3	30.17	766.3	60	15.6	88	N	8	3.6			10s		N	0	0	Cloudy	
Tucson, Arizona	27.42	696.5	29.97	761.2	72	22.2	61	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.10	764.5	30.13	765.3	76	24.4	90	W	4	1.8		5c	0	Calm		0	0	Fair	
Umatilla, Oregon	29.67	753.6			58	14.4	62	W	12	5.4		10k	0	W		0	0	Cloudy	
Vicksburg, Mississippi	29.82	757.4	30.08	764.0	73	22.8	95	SE	4	1.8		5ks	5s	Calm	S	0.03	0.8	Cloudy	
Virginia City, Montana	24.23	615.4	29.71	754.6	44	6.7	67	SE	1	0.4		2c	0	Calm		0.07	1.8	Clear	
Visalia, California	29.44	747.8	29.79	756.7	59	15.0	43	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	30.04	763.0	30.16	766.1	67	19.4	90	Calm	0	0			10n		S	0.02	0.5	Light rain	
Wickenburg, Arizona					75	23.9	24	W				5k	0	Calm		0	0	Fair	
Wilmington, N. Carolina	30.05	763.3	30.12	765.0	75	23.9	90	Calm	0	0		2c	0	W		Inap.	Inap.	Fair	
Winnemucca, Nevada	25.54	648.7	29.90	759.4	53	11.7	35	SW	3	1.3			10s		SW	0	0	Cloudy	
Wood's Holl, Mass	30.15	765.8	30.20	767.1	72	22.2	80	NW	3	1.3		5c	2s	NW	W	0	0	Fair	
Yankton, Dakota	28.83	732.3	30.11	764.8	55	12.8	90	E	4	1.8			Fog		Calm	0	0	Foggy	
Yuma, Arizona	29.61	752.1	29.76	755.9	75	23.9	36	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.76	755.9	29.81	757.2	54.0	12.2	97	SW	20	8.9		1k	2s	SW	SW	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.01	762.2	30.03	762.7	83	28.3	75	NE	2.4	1.1		4c	0	SE		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.15	765.8	30.16	766.1	80	26.7	82	Calm	0	0		5c	2n	E	W	0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.87	758.7	29.95	760.7	81.5	27.5		E			2					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					85	29.4		E				2k	2ks	E	E	Blank	Blank	Fair	
Pt-a-Pitre, G'd'loupe, W. I.	29.85	758.2	29.87	758.7	82	27.8	83	NE				5k	0	E		0.40	10.2		L. V. Bigard.
Bridgetown, Barbados, W. I	30.00	762.0	30.02	762.5	82	27.8	78	NE	5	2.2		5ck	5ks	NE		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.01	762.2	82	27.8	83	E			2	5k	6ks	E		0	0	¾ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			66.5	19.2	86	Calm			0	2cs	3ks			0.04	1.0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	30.09	764.3	30.11	764.8	73	22.8		NE			5					0.05	1.3		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,675 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.79	756.7	57	13.9	54	12.2	100	SSW	26	11.6			2		S&W	0	0			Light fog	
Navy Yard, Pensacola, Fla.	30.33	770.4			81	27.2	83	NNW	3	1.3			5		N	0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.29	769.4	72	22 2	62	16.7	77	NE	10	4.5					NE	0	0			Clear	
Naval Hospital, Yokohama, Japan	29.84	757.9	71.5	21.9	69	20.6	85	ENE			3		8n		N	0.72	18.3			Light rain	
Adams, Rio de Janeiro, Brazil	30.20†	767.1†	70	21.1	68	20.0	95	SE			2		9		SW	0	0			Hazy	
Alert, Yokohama, Japan	30.02†	762.5†	72	22.2	72	22.2	95	NE			3–5		9		ESE			Smooth		Thunder; lightn'g	
Alliance, Smyrna, Turkey	29.91	759.7	86	30.0	86	30.0	61	W			4		1		Calm					Clear	
Ashuelot, Che-foo, China	30.05	763.3	76	24.4	75	23.9	77	S			1		3							D. clouds	
Canonicus, New Orleans, La	30.09	764.3	55	12.8	78	25.6	95	ESE			2		8							Cloudy	
Colorado, New York, N. Y	30.22	767.6	69	20.6	70	21.1	85	NNE	6	2.7			9		N&W	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	30.10	764.5	76	24.4	72	22.2	90	N			5		10		NNE			Moderate.	N	Squally	
Essex, N. 40° 23′, W. 40° 54′	30.33	770.4	77	25.0	77	25.0	91	WSW			2		3					Long	W	D. clouds	
Franklin, Norfolk, Va	30.20	767.1	69	20.6	70	21.1	??	SE	4	1.8			1		SE	0.06	1.5			Drizzling	
Frolic, S. 23° 00′, W. 43° 04′	30.28	769.1	72	22.2	79	26.1	78	NE			2		9kn		Calm	Light	Light	Ground	S&E	D. clouds	
Gettysburg, N. 41° 14′, E. 13°	29.92‡	760.0‡			81	27.2	87	S			3		6		Calm	0	0	Moderate.	S	D. clouds	
Kearsarge, N. 25° 57′, E. 120° 54′	29.99	761.7			83	28.3	96	SW			4		8		SW	0.3	8.	Smooth		Lightning	
Lackawana, Neeah Bay, W. T	30.09	764.3			56	13.3	81	SW			3		4		ENE			Ground	W	D. clouds	
Marion, Constantinople, Turkey	30.00	762.0	77	25.0	74	23.3	81	NE			4		10		NE	0	0	Chop	NE	D. clouds	
Michigan, Erie, Pa	29.70	754.4	69	20.6	69	20.6	80	NE			1		10		NE					Cloudy	
Monocacy, Yokohama, Japan	29.85	758.2	70	21.1	72	22.2	100	E			1		10							Light rain	
New Hampshire, Port Royal, S. C	30.34	770.6			79	26.1	82	NW	5	2.2			4		ESE	0	0			D. clouds	
Omaha, Mexillones, Bolivia	30.14	765.5	65	18.3	63.5	17.5	65	Calm	0	0			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.11†	764.8†	67	19.4	65	18.3	84	SSE			2		10					Long	W	Misty	
Ossipee, Norfolk, Va	30.22‡	767.6	72	22.2	71	21.7	65	Calm			0		10		Calm					Drizzling	
Palos, Shanghai, China	30.04	763.0	77	25.0	74	23.3	90	SW			0–1		10		Calm					Raining	
Plymouth, New York, N. Y	30.45	773.4	76	24.4	71	21.7	85	Calm			0		10		W					Cloudy	
Ranger, N. 31° 05′, E. 126° 50′	30.10	764.5			80	26.7	78	ENE			3		10		SW			Rough	SE	Cloudy	
Richmond, Boston, Mass	30.31	769.9	65.2	18.4	64.0	17.8	78	NNE			4		10		Calm	0	0			Overcast	
Rio Bravo, Brownsville, Texas	29.86	758.4			76	24.4	95	SE			2		9		SE					Overcast	
Santee, Annapolis, Md	30.24	768.1	71	21.7	68	20.0	90	SW			1		10		SW	0	0			Overcast	
St. Louis, League Island, Pa	30.08	764.0	69	20.6	70	21.1	85	SSE	1	0.4			10		ESE	0	0			Overcast	
Tennessee, Yokohama, Japan	29.82	757.4	74	23.3	72	22.2	80	NE	14	6.3			10			0.73	18.5	Moderate		Thunder-storm	
Trenton, Marseilles, France	30.10†	764.5†	80	26.7	80	26.7	70	SE	21.5	9.6			7		S&E	0	0			D. clouds	
Vandalia, Beirut, Syria	29.87	758.7	84	28.9	83	28.3	79	SW			3		5		SW					D. clouds	
Wabash, Boston, Mass	30.20	767.1	63	17.2	62	16.7	83	NE	11	4.9			10		Calm	0	0			D. clouds	
Wyoming, Washington, D. C	30.30†	769.6†	72	22.2	72	22.2		Calm			0		10							Drizzling	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio N. 22° 29′, E. 115° 42′					82	27.8		S			4		6		SSW	Smooth.	WSW	Cloudy	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

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

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 37° 09′, E. 158° 50′			29.83†	757.7†	74	23.3		W			6		k		WSW	Heavy	W	Overcast	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 47° 38′, W. 36° 6′	SW by W½W		30.20	767.1	63.0	17.2	80	NNE			4		km		N	Smooth		Overcast	Capt. A. Jaeger.
S. S. Ohio N. 50° 21′, W. 1° 4′			29.99	761.7	65.0	18.3	54	Calm			0		c;k		E	Tranq'l		Haze & sm'e	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Newport, R. I.			30.13	765.3	68	20.0	79	NNE	12	5.4		5ck	2s	NW	NE			Clearing	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 7, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.92	760.0	82.8	28.2	69	Calm			0		3			0.094	2.4	Fair	Michel.
Algiers			29.95	760.8	104.7	40.4	14	S			4		10			Inap	Inap.	Hidden	Peter.
La Calle			29.99	761.7	91.0	32.8	60	E			2		5			0	0	Fair	Fleury.
Tunis			30.01	762.2	87.8	31.0		E			3		2			0	0	Clear	Jacques.
Sfax			30.11	764.7	87.8	31.0		S			2		7			0	0	Cloudy	Husson.
Saida			30.04	762.9	84.4	29.1		NW			5		6			Inap.	Inap.	Fair	Millot.
Tebessa			30.12	765.1	78.8	25.7		S			2		2			0	0	Clear	Bourgeois.
Geriville			29.95	760.6	75.9	24.4	65	SE			5		10			0	0	Hidden	Lemaillot.
Laghouat			30.04	763.0	93.2	34.0	36	E			4		2			0	0	Clear	François.
Biskra			30.05	763.3	101.1	38.4	36	SE			1		6			0	0	Fair	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.41	747.0	29.04	760.4	72.3	22.4	39	SW			5		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.21	741.8	29.96	760.9	65.1	18.4	50	W			2		3			0	0		Dr. Wierzbiski.
Eperies	29.16	740.7	30.02	762.6	63.0	17.2	71	S			3		9s		NE	0	0		Julius Mikolik.
Gratz	28.71	729.1	29.92	760.0	66.0	18.9	59	SSW			2		0			0	0		Andreas Rospini.
Hermannstadt	28.67	728.2	30.07	763.7	65.1	18.4	46	SE			5		5			0	0		Prof. Reissenberger.
Kremsmünster	28.52	724.5	29.83	757.6	64.4	18.0	55	ESE			2		3			0	0		Prof. C. Wagner.
Lemberg	29.02	737.1	29.98	761.5	64.2	17.9	67	SW			2		7			0	0		Dr. T. Stanecki.
Pola	29.91	759.6	30.02	762.4	74.5	23.6	54	ESE			2		4cs			0.059	1.49		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.82	757.4	30.10	764.4	51.4	10.8	62	N			4		10			0	0		Karl Stancel.
Trieste	29.95	760.6	30.05	763.2	72.1	22.3	57	NE			1		0			0.138	3.5		P. Busin.
Vienna	29.23	742.5	29.91	759.6	69.4	20.8	80	SE			1		0			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.33	719.6	29.88	757.7	53.2	11.8	96	NNW			1		10			0.677	17.2		
Brussels	29.63	752.5	29.82	757.5	60.3	15.7	67	SSE			2		10		WSW	0.038	0.85		Royal Observatory.
Furnes	29.83	757.7	29.85	758.3	61.9	16.6	67	NE			2		10			0	0		
Maeseyck	29.70	754.3	29.83	757.6	57.7	14.3	86	SSE			2		8			0.031	0.8		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.89	759.2	29.98	761.5	51.6	10.9		NW	15	6.7			7			0	0	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	29.97	761.2	29.98	761.5	54	12.2		NW			2		5					D. clouds	William McNeil.
Armagh, Observatory			29.99	761.7	55.3	12.9		NE	7	3.1			3					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.92	760.0	55.6	13.1		ENE	16	7.2			9					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.93	760.2	58.0	14.4		NNE			2-3		8					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.56	750.8	29.94	760.5	54.3	12.4		NE			0		10			0.12	3.0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.88	758.9	58.0	14.4		N			1		10					Overcast	H. Todd. [H.C
Cardington			29.90	759.4	58.4	14.7		NE			2		8					Overcast	John McLaren.
Chatham, School M. E	29.71	754.6	29.84	757.9	62.2	16.8		E			3		6					Blue sky	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.37	720.6	29.82	757.4	59.0	15.0		NE			5		3					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.96	761.0	29.99	761.7	55	12.8		NNE			4		0					Blue sky	J. Mac Gowan.
Dover	29.82	757.4	29.84	757.9	62	16.7		NE			3		5					⅜ clouded	J. Costello.
Eccles, (near Manchester)			29.92	760 0	57.0	13.9		ENE	2.0	0.9			7					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.56	750.8	29.79	756.7	60.7	15.9		ENE			4		7					Overcast	The Staff.
Fort Napier, (Natal)	27.72	704.1	29.91	759.7	89.4	31.9		E			2		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.02	762.5	80.0	26.7		SW			0		5					Raining	
Galway, Queen's College			29.89	759.2	59	15.0		NE			4		3					D. clouds	R. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.79	756.7	29.83	757.7	79.8	26.6		W			4		4					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.79	756.7	30.00	762.0	53.0	11.7		NNW			2		5					D. clouds	D. G. Maclean.
Great Yarmouth	29.88	758.9	29.89	759.2	58	14.4		NE			4		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.68	753.9	29.85	758.2	62.3	16.8		NE			2		9					N'ly overcast	The Staff, for G. B. Airy.
Guernsey	29.50	749.3	29.72	754.9	63	17.2		ENE			3		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.84	757.9	62	16.7		N			4		2ck			0	0	Fine	M. P. Moyle.
Holyhead	29.86	758.4	29.91	759.7	58	14.4		ENE			4		1					Blue sky	John Tilston.
Jersey	29.44	747 8	29.73	755.1	63.0	17.2		ENE			5		10					Overcast	J. Fisher.
Kew, Observatory			29.86	758.4	60.5	15.8		E	12	5.4								Hazy	The Staff.
Kingstown	29.91	759.7	29.94	760.5	56	13.3		ENE			5		10					Overcast	George Mitchell.
Leicester, Museum			29.96	761.0	55.9	13.3		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.98	761.5	30.05	763.3	86.8	30.4		SE			1		2					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	29.88	758.9	29.97	761.2	54	12.2		NW			1		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.00	762.0	84.8	29.3		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.75	755.6	29.94	760 5	58.0	14.4		NNE			3		10k		N	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.38	746.2	29.90	759.4	56.2	13.4		NE			3		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.86	758.4	59	15.0		NE			1		10					Gloomy	F. Lucas
Plymouth	29.72	754.9	29.80	756.9	62.3	16.8		ENE			4		3					D. clouds	John Merrifield.
Roche's Point	29.82	757.4	29.86	758.4															W. Kennedy.
Saint Ann's Head	29.68	753.9	29.84	757.9	62	16.7		SSE			1		4					Hazy	John C. Walker.
Sandwick Manse, (Orkneys)			29.96	761.0	51.2	10.7		NW	20	8.9			10					Foggy	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			30.08	764.0	75.0	23.9		ENE			2		8					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.70	754.4	29.94	760.5	55.7	13.2		ENE			1		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	29.94	760.5	29.97	761.2	57.7	14.3	57	SE			2		1			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					57.0	13.9		NE			1		10					Overcast	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C., (Hebr.)			29.99	761.7	51	10.6		NNW			1		2					Blue sky	John Smith.
Stratfield Turgiss	29.64	752.8	29.85	758.2	61.0	16.1		E			1		5					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.95	760.7	54	12.2		NNW			2		8					Overcast	John Trotter.
Truro, Royal Institution			29.84	757.9	66	18.9		E			4		4					D. clouds	W. Newcombe.
Valencia, Observatory			29.88	758.9	58.3	14.6		NE	19	8.5			2					Hazy	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					55	12.8		E			3		3			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.92	760.0	29.96	761.0	65.8	18.8	81	NW	14	6.3		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.11	764.8	52.5	11.4	82	W			1		10kn			0	0	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.01	762.2	58.0	14.4		E			2					0	0	Hazy	Andrew Gibb.
Mauritius, Observatory	30.01	762.2	30.20	767.1	74.1	23.4	66	ESE	15.5	6.9		0	4		ESE	0.17	4.3	Fine	C. Meldrum.
Melbourne, Observatory	30.25	768.3	30.34	770.6	49.1	9.5	86	S	3	1.3			6			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.04	763.0	52	11.1		NW			2	3	0	NW		0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.89	759.2	49	9.4		NW			3		10						Robert Burnet.

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

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Fahrenheit.	Centigrade.	Relative Humidity.	Wind. From—	Wind. Miles per hour.	Wind. Meters per second.	Force. 0—10.	Clouds. Up'er 0—10.	Clouds. Low'r 0—10.	Clouds. Upper. From—	Clouds. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 40° 42′, W. 63° 45′			30.15	765.8	72	22.2		NE			4		10	W	ENE	*5	NE	Overcast	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Moulund.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 44° 15′, W. 56° 55′			30.20	767.1	62	16.7		N			4		3			3	WNW	Blue sky	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 49° 7′, W. 50° 40′			30.09	764.3	61	16.1		WNW			3		0			0			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2			66.2	19.0	92	NE			2		9s			0.5	13.		Federico Maison.

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

DANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	29.68	753.8	29.72	755.0	55.9	13.3	58	WNW			4		6						
Fanöe	29.78	756.3	29.80	756.8	55.6	13.1	66	WNW			4		3						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.55	750.6	29.60	751.7	53.4	11 9	93	SW			6		0						
Thorshavn, (Faröe)	29.97	761.3	30.01	762.2	50.2	10.1	94	W			6		10					Raining	
Vestervig	29.54	750.2	29.71	754.5	53.6	12.0	72	NW			6		3						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.21	742.0	29.76	756.0	60.8	16	94	ENE			1		10		W	0.39	10.	Covered	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.82	757.5	29.90	759.5	81.7	27.6	44	S			3		5		SW	0	0	Cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.20	741 7	29.74	755.5	72.3	22.4	64	SSW			1		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.51	749.6	29.80	756.8	67.8	19.9	71	ENE			2		8		E	0.324	8.25	Very cloudy	Normal School.
Besançon	28.98	736.2	29.84	758.0	73.8	23.2	80	S			4		2		SW	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	28.98	736.2	29.91	759.6	75.7	24.3	40	S			4	5c		S		0	0	Cloudy	Normal School.
Bourges, Normal School	29.20	741.7	29.73	755.1	72.0	22.2	68	SE			1		5		SW	0.807	20.5	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.57	751.0	29.79	756.6	62.8	17.1	66	NE			3		10		NE	0.059	1.50		The Staff.
Carcassonne, Normal School	29.33	745.0	29.73	755.1	78.1	25.6	81	W			8		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoullé, Director.
Châlons-sur-Marne, N. Sch'l	29.47	748.6	29.78	756.5	64.4	18.0	71	NW			1		10n		SW	0.098	2.5	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.31	719.1	29.58	751.2	80.4	26.9	43	S			3		8		SW	0 024	0.6	Very cloudy	Alluard, Director.
Commercy, Normal School	28.92	734.6	29.78	756.3	68.0	20.	81	W			2		5		W	0.059	1.5	Cloudy	Dr. Goulet, Director
Commune de Gréasque*	28 84	732.4	29.98	761.4	81.1	27.3	41	SW			4		8		SW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La-Roche-sur-Yon, N. School	29.42	747.2	29.63	752.5	64.0	17.8	88	SE			4		8		SE	0.12	3.	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.42	747.3	29.72	755.0	61.7	16.5	96	NE			1		10			0.08	2.	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School.	28.94	735.1	29.81	757.3	73.4	23	46	SE			4		2			0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory.	29.57	751.0	29.67	753.5	61.2	16.2	79	NE			3		10		NE	0.236	6.0	Covered	T. Carré, Director.
Mâcon, Normal School	29.13	739.8	29.78	756.4	75.6	24.2	77	S			4		5		W			Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.79	731.2	29.81	757.1	60.1	15.6	56	SSW			4		8		WSW	0.295	7.5	Very cloudy	Normal School
Nismes, Normal School	29.71	754.5	29.90	759.5	77.9	25.5	64	S			4		5		S	0	0	Cloudy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.54	750.2	29.77	756.2	60.3	15.7	85	NE			1		10			0.181	4.60	Foggy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.58	751.4	29.61	752.2	68.0	20.0	89	SSE			1		10		SE	0.24	6.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.69	754.2	29.78	756.4	62.8	17.1	69	NNE			2		10		E	0.024	0.6	Covered	F. Lucard, Director.
Tarbes, Normal School	28.65	727.7	29.65	753.2	86.0	30	64	E			1		10		E	0	0	Covered	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0.39	10.		L'Abbé Marchésl.
Marseilles, Observatory			29.91	759.6	78.8	26.0	42	SE			2-3		9			0	0	Covered	The Staff.
Mont-Louis	24.82	630.5	30.14	765.5	64.0	17.8	48	S	29.8	13.33			7		W	0.232	5.9		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.49	749.1	29.77	756.1	60.1	15.6	88	NE			1		10			0.181	4.6		Marié Davy, Director.
Perpignan			29.82	757.3	81.5	27.5	63	SW	26.1	11.67			4		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.20	538.6			44.6	7.0		S			4		7					Raining	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.43	569.8			51.4	10.8		S			4-6		7			0.228	5.8	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.61	752.0	29.77	756.2	61.2	16.2	88	NE			1		10			0.232	5.9	Rainy	E. Renou.
Toulouse, Observatory	29.37	746.1	29.70	754.4	81.1	27.3	50	SSE			6		4			0.071	1.8		The Staff.
Tours	29.52	749.7	29.71	754.7	66.2	19.0	90	E			1		10		SW	0.360	9.3		C. Marquet.
Versailles, (near Paris)			29.77	756.1	59.7	15 4	89	E			1		10			0.289	7.33	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.85	758.2	29.87	758.8	70.7	21.5	96	SW	8 5	3.8			10k			0.028	0.7	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall was measured at 7. 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. T. Hoh.
Berlin	29.66	753.4	29.83	757.7	64.2	17.9	48	N			1		10					Raining	Prof. Arndt.
Breslau	29.35	745.6	29.88	759.0	63.5	17.5	60	S			5		10					Raining	Royal University Obs'y.
Carlsruhe	29.36	745.8	29.77	756.2	69.1	20.6	73	S			1		10			0.236	6.0		Albert Senz.
Cassel	29.33	745.0	29.94	760.4	54.3	12.4	94	SE			2		10	WSW		0.180	4.57		Dr. H. Möhl.
Crefeld	29.65	753.2	29.82	757.3	59.5	15.3	71	NE			3		9			0	0	Light fog	Director Lose.
Emden	29.82	757.5	29.86	758.4	57.4	14.1	64	N			3		10			0	0		Prof. Prestel.
Frankfort on the Main	29.49	749.1	29.85	758.3	55.2	12.9	83	E			1		10			0.185	4.7		Physical Society.
Friedrichshafen	28.47	723.0	29.85	758.2	68.4	20.2	63	SW			1		6	NW		0.091	2.3	Raining	M. Wilhelm.
Hamburg	29.76	755.9	29.83	757.7	58.5	14.7	62	WNW			3		10ks			0	0		Captain F. Hegemann.
Kiel	29.78	756.4	29.80	756.8	57.6	14.2	62	W			2		7			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.72	754.9	29.80	756.9	62.8	17.1	57	S			2								Prof. E. Luther.
Köslin			29.80	756.8	61.7	16.5		SW			2		4			0.102	2.6		H. Müller.
Leipsic, Observatory	29.46	748.2	29.87	758.8	59.5	15.3	63	SW			1		10					Raining	Prof. Bruhns.
Memel, Naval School	29.74	755.5	29.79	756.7	61.0	16.1	66	S			6		10ks						Reinbrecht von Skalweit.
Neufahrwasser	29.77	756.2	29.79	756.6	64.6	18.1	57	WSW			3		10			0	0		A. Lothes.
Posen	29.58	751.3	29.86	758.4	70.2	21.2	39	WSW			6–7		9			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.26	743.3	29.79	756.7	72.5	22.5	59	S			3		8	SW		0.202	5.14		Dr. Schur.
Stuttgart	28.87	733.4	29.80	757.0	72.9	22.7	51	SW			1		7	W		0.370	9.4	Raining	Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.35	720.1	30.20	767.0	68.0	20.0	53	W			1		9	W		0.039	1.0		Dr. Von Bebber.
Wustrow, Naval School	29.82	757.4	29.86	758.4	57.0	13.9	79	W			2		0			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.70	754.3	30.05	763.3	82.0	27.8		NE			Strong							Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.64	752.9	29.69	754.2	83.0	28.3	79	SW	29.0?	13.0?			3		SW	0	0	D. clouds	
Deesa																			
Bombay	29.72	755.0	29.76	756.0	82.6	28.1	79	NW	15.0	6.7			7	S	NNW	0	0	Misty	
Poona	27.69	703.2	29.67	753.5	81.5	27.5	61	NW					10		W	0	0	D. clouds	
Lahore	28.89	733.8	29.62	752.3	88.1	31.2	62	W	1.9	0.8			8			0	0	Cloudy	
Belgaum	27.29	693.2	29.85	758.1	70.0	21.1	93	W	9.0	4.0			10		W	1.22	31.0	Overcast	
Bangalore																			
Roorkee	28.73	729.8	29.60	751.8	94.2	34.6	50	Calm	4.3	1.9						0	0		
Agra	29.03	737.4	29.58	751.2	97.7	36.5	44	E					4		E	0	0		
Trichinopoly																			
Nagpur	28.69	728.6	29.74	755.4	73.6	23.1	98	Calm	5.5	2.5			10			2.30	58.4	Overcast	
Madras																			
Lucknow	29.28	743.8	29.65	753.0	90.2	32.3	56	E	5.5	2.5			2		E	0	0	D. clouds	
Allahabad	29.31	744.4	29.61	752.2	84.7	29.3	87	Calm	2.9	1.3			2	SE		0.25	6.3	D. clouds	
Patna	29.45	748.1	29.63	752.7	82.3	27.9	87	E	1.7	0.8			10	E	E	0.18	4.6	Overcast	
Hazaribagh	27.59	700.8	29.59	751.5	77.3	25.2	60	NE	9.4	4.2			9		NE	0.10	2.5	Rain and fog	
Cuttack	29.45	747.9	29.53	750.0	81.0	27.2	86	ENE	8.0	3.6			7			1.06	26.9	D. clouds	
Calcutta (Alipore)	29.57	751.2	29.60	751.7	82.6	27.8	85	NW	11.0	4.9			10		S	0	0	Overcast	
Goalpara	29.33	744.9	29.72	754.8	80.1	26.7	87	SE	1.7	0.8			9			0.39	9.9	D. clouds	
Chittagong	29.69	754.1	29.78	756.4	81.9	27.7	87	S	13.0	5.8			10			0	0	Overcast	
Sibsagar	29.40	746.8	29.74	755.3	79.9	26.6	91	ENE	2.7	1.2			10	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.32	719.4	29.69	754.1	76.8	24.9	86	W	1.9	0.8			10	W	W	0.37	9.4	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.27	565.7	29.97	761.2	42.8	5.7	98	WNW			2		10			0.421	10.7		Ab. Dom. Morgini.
Stelvio	22.24	564.8	29.94	760.4	45.5	7.5		W			2		7	SSE		0.020	0.5		Signora Ernesta Manfredi.
Udine	29.61	752.0	30.00	762.1	71.1	21.7	46	SE	1.8	0.8			5			0	0		Prof. Giovanni Clodig.
Padua	29.89	759.2	30.00	761.9	74.3	23.5	49	S	4.3	1.9			4	SW		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.80	756.9	29.98	761.6	76.3	24.6	34	SSE	3.1	1.4			1	W		0	0		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.72	729.5	29.99	761.8	73.8	23.2	41	S			1		7			0.091	2.3		Prof. Trionfini Carlo.
Domodossola	29.04	737.6	30.03	762.7	64.4	18.0	70	Calm			0		10			0.025	0.7		Prof. Giuseppe Calza.
Milan	29.50	749.4	30.00	761.9	78.3	25.7	47	E			1		2			0	0		Ab. Gio. Capelli.
Pavia	29.68	753.8	30.01	762.2	78.2	22.9	39	N			2		2	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.13	740.0	30.00	762.1	71.6	22.0	47	ENE	0	0			9	W		0	0		Prof. P. F. Denza.
Mondovi	28.15	714.9	29.98	761.4	68.4	20.2	48	NNW			4		9	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.77	756.2	30.02	762.6	74.7	23.7	67	E			6		5			0	0		Prof. L. Vassallo.
Genoa	29.84	757.9	30.00	762.0	71.6	22.0	8	Calm	0	0			10	S		0.252	6.4		Prof. G. M. Garibaldi.
Piacenza	29.76	755.8	30.00	762.1	74.1	23.4	37	S			2		7			0	0		Dott. G. Manzi.
Parma	29.69	754.1	30.00	761.9	75.4	24.1	59	ESE			4		6			0	0		Prof. P. Pigorini.
Florence	29.77	756.2	30.02	762.4	81.1	27.3	4	W			2		6	SSW		0	0		Cav. F. Meucci.
Leghorn	29.93	760.2	30.01	762.3	78.4	25.8	67	E	4.3	1.9			6	W		0	0		Prof. P. Monte.
Siena	28.74	730.0	29.91	759.6	81.1	27.3	45	SW	1.3	0.6			7	W		0	0		Prof. L. Toscani.
Urbino	28.50	724.0	30.00	762.0	77.0	25.0	59	SW			2		4			0	0		Prof. P. Serpieri.
Pesaro	29.95	760.7	30.00	761.9	77.5	25.3	70	E			1		1	SW		0	0		Prof. Luigi Guidi.
Ancona	29.89	759.2	29.99	761.8	80.2	26.8	50	SE			4		2			0	0		Prof. F. DeBosis.
Grosseto	29.93	760.1	30.03	762.8	82.0	27.8	66	S			2		3	SW		0	0		Avv. P. Ponticelli.
Rome	29.67	758.8	30.04	763.1	82.8	28.2	46	S	11.9	5.3			0			0.075	1.9		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.89	759.2	30.08	764.1	82.4	28.0	52	SW			2		4	SE		0	0		Prof. L. Palmieri.
Lecce	29.85	758.1	30.09	764.2	78.1	25.6	44	WNW	7.4	3.3			1			0	0		Prof. C. DeGiorgi.
Cosenza	29.23	742.4	30.07	763.7	83.1	28.4	43	NNE	0	0			0			0	0		Prof. F. D. Conti.
Cagliari	29.69	754.1	29.87	758.7	86.9	30.5	37	S			6		1	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.94	760.4	29.98	761.6	83.5	28.6	70	SE			2		7	NE		0	0		Prof. F. Caffero.
Palermo	29.76	755.8	30.00	761.9	82.2	27.9	60	E	6.9	3.1			0			0	0		Prof. G. Cacciatore.
Caltanissetta	28.13	714.4	29.97	761.1	84.7	29.3	27	S			4		0			0	0		Prof. A. Pagani.
Syracuse	29.94	760.4	30.01	762.3	86.7	30.4	61	SW			6		5	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.56	750.9	30.12	765.0	80.4	26.9	56	NW	6.3	2.8			0			0	0		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	30.12	765.0	30.20	767.1	63.1	17.3	93	N	4.4	2.0			0			0.24	6.1	Clear.	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.09	586.4	30.07	763.8	59.9	15.5	78	SE	0.6	0.28		0	10ks		N	0.05	1.2	Covered	Mariano Bárcena. Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	29.86	758.4	29.86	758.4	63.0	17.2		NNE			3					0	0		
Groningen	29.50	756.9	29.85	758.3	57.2	14.0		N			1					0	0		
Helder	29.86	758.5	29.86	758.5	58.3	14.6		NE			4					0	0		
Utrecht	29.81	757.1	29.85	758.3	62.4	16.9	63	NW			2		5			0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.68	753.9	29.74	755.3	51.8	11.0	54	NNW	19.9	8.9			1			0	0		
Brono	29.74	755.3	29.78	756.3	52.2	11.2	68	SW	7	3			6			0	0		
Christiania	29.45	748.0	29.60	751.7	50.9	10.5	69	NNE	7	3			10			0.213	5.4		
Tromsö	29.62	752.4	29.67	753.5	49.6	9.8	66	NE	4	2			2			0	0		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.81	759.6	30.10	764.4	67.1	19.5	88	W	9.4	4.2			9			0	0		Dr. J. A. Sampaio
Campo Major	28.69	728.6	29.70	754.4	65.8	18.8	88	SE	15.0	6.7			10	SSW		1.457	37.0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.88	759.0	29.97	761.2	75.4	24.1	60	NNW	9.8	4.4			2			0.256	6.5		Capt. D. A. de Cunha.
Lisbon, Observatory	29.23	742.5	29.59	751.5	68.5	20.3	90	SW	15.0	6.7			10			1.114	28.3		The Staff.
Ponta Delgada, (Azores)	30.03	762.7	30.10	764.5	70.9	21.6	63	NW	1.8	0.8			3			0	0		

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

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

RUSSIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Warsaw	29.47	748.6	29.88	759.0	67.8	19.9	43	SSW	9	4			6						Astronomical Obs.
Wilna	29.54	750.3	29.95	760.7	63.7	17.6	52	SSW	13	6			9						Astronomical Obs.
Dorpat	29.59	751.6	29.83	757.6	61.3	16.3	58	S	13	6			10						Physical Cabinet.
St. Petersburg	29.82	757.4	29.84	757.8	60.1	15.6	61	SSW	10	7			8						Central Physical Obs.
Kuopio	29.31	744.4	29.62	752.4	52.7	11.5	88	E	18	8			10					Raining	Ch. Forsten.
Kieff	29.50	749.4	30.12	765.1	65.3	18.5	51	SSW	7	3			6						Physical Cabinet.
Nikolaiev	30.17	766.4	30.24	768.2	70.9	21.6	35	NE	4	2			0						Kurdakof.
Kertch	30.15	765.8	30.17	766.3	65.1	18.4	54	NNW	7	3			7						Lagorio.
Moscow	29.59	751.6	30.13	765.4	61.2	16.2	57	S	4	2			4						Meteorological Obs.
Lugan	29.74	755.3	29.94	760.4	60.3	15.7	59	N	18	8			10						Meteorological Obs.
Archangel	29.93	760.1	29.95	760.6	52.7	11.7	78	S	9	4			9						Ogorodnikof.
Tiflis	28.47	723.1	29.80	757.0	83.3	28.5	41	N	22	10			8						Physical Observatory.
Astrakhan	29.89	759.1	29.80	757.0	75.4	24.1	76	NW	4	2			10			Blank	Blank		Sebastianof.
Kasan	29.71	754.6	29.97	761.3	57.6	14.2	56	NNW	7	3			6						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	28.90	734.1	29.84	758.0	51.1	10.6	73	N	9	4			9						Meteorological Obs.
Nukuss	29.54	750.4	29.76	756.0	88.2	31.2	39	NNE	7	3			0						
Kasaly																			Bobrof.
Tashkend	28.19	716.1	29.82	757.5	75.6	24.2	93	Calm	0	0			0						Michelson.
Barnaul	29.42	747.2	29.93	760.2	58.8	14.9	51	Calm	0	0			10						Meteorological Obs.
Yeniseisk	29.64	752.8	29.78	756.5	54.1	12.3	85	WSW	7	3			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.74	755.3	29.88	758.9	67.6	19.8	84	Calm	0	0			3						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					49.1	9.5	94	Calm	0	0			0						

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

SPANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.55	699.8			60.1	15.6	99	SW	19.4	8.67		0	10			0.532	13.5	Stormy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.4	30.02	762.4	81.1	27.3	80	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.72	754.8	29.81	757.3	71.1	21.7	88	SSE	35.9	16.0		0	10		SW	0.197	5.0	Light rain	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.86	758.9	81.0	27.2	88	SSW				4cs	1k			0.512	13.00	D. clouds	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.70	754.4	29.74	755.4	55.0	12.8	68	E			2		10					Raining	
Umea	29.59	751.6	29.64	752.9	51.4	10.8	87	ENE			2		10			0.268	6.8		
Hernosand	29.52	749.8	29.57	751.1	54.3	12.4	74	NE			4		5			0.106	2.7	Raining	
Stockholm	29.37	746.1	29.55	750.6	52.5	11.4	71	WSW			2		8			0.110	2.8		
Wisby	29.60	751.9	29.66	753.4	51.4	10.8	96	SW			6		7			0.118	3.0	Raining	
Sub-Series.																			
Upsala	29.46	748.3	29.54	750.2	48.9	9.4	94	ESE	3.6	1.6			8		SW	0.561	14.25		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.47	723.0	29.83	757.7	75.6	24.2	36	SSW			1		7			0	0	Cloudy	The Observatory.
Zurich	28.28	718.4	29.87	758.6	70.5	21.4	65	W			1		4			0.031	0.8	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —4.3 mm; Thermometer, +4.8 cent.; Relative Humidity, —24 per cent.

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

TURKISH SERIES.

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

Constantinople			30.14	765.5	71.4	21.9	63	NE	25	11.0			8		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.21	767.3	77.4	25.2		S			1		2						B. Stefanides.
Valona			30.17	766.2	78.4	25.8		NW			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			30.20	767.0	73.4	23.0		E			2		0						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'ry	29.70	754.4	29.81	757.1	93.7	34.3	53	SW			3		7s		SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

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

CANADIAN SERIES.

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

Bathurst, N. B			30.30	769.6	53	11.7		NE	5	2.2			10s		NE		0		Hon. J. Ferguson.
Brockville, Ontario			30.39	771.9	48	8.9	81	NW	1	0.4		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B			30.36	771.1	58	14.4	57	NW	9	4.0		5k	0	Calm		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island			30.28	769.1	51.5	10.8	89	E			3	10c	0			0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	30.09	764.3	30.38	771.6	50.2	10.1	44	W			1					0	0	Bright	James Smith, M. A.
Dalhousie, N. B	30.34	770.6	30.12	765.0	47.3	8.5	100	Calm				0	0			0	0	Hazy	H. A. Johnson.
Esquimault, B. C	30.07	763.8	30.42	772.7	47	8.3	84	SW	9	4.0		0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.42	772.7	48.5	9.2	82	NE	2	0.9		0	0			0	0	Clear	J. McWilliams.
Fredericton, N. B	30.35	770.9	29.87	758.7	61	16.1	97	S	10	4.5		Haze	5ks	S	S	0.010	0.25	Hazy	Prof. Harrison.
*Fort Garry, Manitoba			29.47	748.5	30.27	768.8	53.1	11.7	80	NE		1	6k	2s	NE		0	0	Cloudy	James Stewart.
Goderich, Ontario	29.11	739.4	30.21	767.3	53	11.7	80	N			1		10n			0	0	Cloudy	H. J. Strang, M. A
Granton, Ontario	30.18	766.6	30.31	769.9	54	12.2	74	NE	5	2.2		0	0			0.098	2.49	Clear	James Grant.
*Halifax, N. S	29.87	758.7	30.24	768.1	56.9	13.8	82	NE			3	10ck	0			0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	30.16	766.1	30.19	766.8	52	11.1	73	N			2	0	0			0.13	3.3	Fine	Geo. Dickson, M. A
Henri's Content, N. F	29.95	760.7	30.32	770.1	54	12.2	76	NE	10	4.5			10ks		NE	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	30.14	765.5	30.34	770.6	51	10.6	77	NE	5	2.2		2cs	0			0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.63	752.6	30.33	770.4	50	10.0	78	NE	15	6.7		0	0			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.54	750.3	30.29	769.4	53.7	12.1	80	N			1		10n			0.05	1.3	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.51	749.5	30.20	767.1	55	12.8	81	NE	16	7.2		10k	0	E		0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	30.28	769.1	30.33	770.4	57.5	14.2		Calm			0					0	0	Fine	H. Morgan.
Port Hastings, N. S	29.55	750.6	30.19	766.8	56	13.3	77	N	10	4.5			10ks		NE	0	0	Cloudy	Peter Grant
Port Stanley, Ontario	30.10	764.5	30.42	772.7	53	11.7	80	NE	5	2.2		0	0			0	0	Clear	M. Payne.
*Quebec, Quebec	29.93	760.2	30.40	772.1	43	6.1	98	W	3	1.3						0	0	Foggy	Capt. Ashe, R. N
*Rockliffe, Ontario	30.23	767.8	30.40	772.1	48	8.9	92	NE			1	0	0			0	0		W. H. McIntyre.
St. John, N. B	29.54	750.3	30.24	768.1	56	13.3	80	Calm	0	0		0	0			0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario			30.27	768.8	52	11.1	76	Calm	0	0		5k	0	SE		0	0	Cloudy	K. Stewart.
Stayner, Ontario	28.95	735.3	30.23	767.8	52.0	11.1	82	NE	3	1.3			10s			0	0	Cloudy	R. J. Cole.
Stratford, Ontario	30.28	769.1	30.31	769.9	56	13.3	65	N	3	1.3		0	5ks		N	0.04	1.0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	29.85	758.2	30.23	767.8	57	13.9	77	NE	6	2.7			10n		E	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario																			Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					58.0	14.4	76	N				0	2s			0.11	2.8	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain fall or melted snow in the past 24 hours. Inches.	Rain fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.01	762.2	30.24	768.1	60	15.6	83	Calm	0	0			10s		Calm	0.18	4.6	Cloudy	
Alpena, Michigan	29.64	752.8	30.30	769.6	52	11.1	79	N	4	1.8		1ck	0	NE		0	0	Clear	
Atlantic City, New Jersey	30.01	762.2	30.03	762.7	66	18.9	100	NE	34	15.2			10n		NE	1.30	33.0	Heavy rain	
Augusta, Georgia	29.85	758.2	30.03	762.7	76	24.4	91	N	3	1.3			10s		N	1.08	27.4	Cloudy	
Baltimore, Maryland	29.98	761.5	30.03	762.7	64	17.8	89	NE	11	4.9			10n		NE	1.89	48.0	Light rain	
Barnegat, New Jersey	30.02	762.5	30.04	763.0	65	18.3	100	E	34	15.2			10n		E	1.48	37.6	Light rain	
Bismarck, Dakota	28.00	711.2	29.58	751.3	69	20.6	58	SW	2	0.9		10c	0	NE		0	0	Cloudy	
Boise City, Idaho	27.23	691.6	29.86	758.4	45	7.2	46	E	2	0.9		1k	0	Calm		0	0	Clear	
Boston, Massachusetts	30.12	765.0	30.27	768.8	59	15.0	87	NE	16	7.2			10s		NE	0	0	Cloudy	
Brackettville, Texas	28.90	734.0	29.90	759.4	71	21.7	95	E	6	2.7			10n		Calm	1.00	25.4	Light rain	
Breckenridge, Minnesota	28.94	735.1	29.90	759.4	60	15.6	88	SE	23	10.3			10ks		SW	0	0	Cloudy	
Brownsville, Texas	29.93	760.2	29.99	761.7	76	24.4	95	Calm	0	0		2c	Sm'e	Calm		0.05	1.3	Fair	
Buffalo, New York	29.46	748.3	30.16	766.1	60	15.6	100	NE	8	3.6			10n		NE	1.27	32.3	Light rain	
Burlington, Vermont	30.06	763.5	30.32	770.1	56	13.3	80	Calm	0	0		8c	0	Calm		0	0	Fair	
Cairo, Illinois	29.79	756.7	30.18	766.6	66	18.9	84	S	2	0.9		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.72	678.7	30.22	767.6	72	22.2	57	Calm				0	8s		Calm	0	0	Fair	
Campo, California	27.30	693.4	29.87	758.7	47	8.3	77	Calm	0	0		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.94	760.5	29.95	760.7	79	26.1	82	SW	10	4.5		8k	0	SW		0	0	Fair	
Cape Henry, Virginia	29.94	760.5	29.97	761.2	71	21.7	100	W	6	2.7			10n		W	1.74	44.2	Light rain	
Cape Lookout, N. Carolina	30.00	762.0	30.02	762.5	83	28.3	70	SW	14	6.3		2c	5s	W	SW	0	0	Cloudy	
Cape May, New Jersey	29.94	760.5	29.97	761.2	66	18.9	100	NE	24	10.7			10n			3.40	86.4	Heavy rain	
Charleston, South Carolina	29.96	761.0	30.03	762.7	81	27.2	82	SE	4	1.8		5cs	2s	SW	SW	0	0	Fair	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	58	14.4	48	SW	4	1.8			10s		SW	0	0	Cloudy	
Chicago, Illinois	29.53	750.0	30.21	767.1	64	17.8	78	Calm	0	0		5ck	0	SE		0	0	Fair	
Cincinnati, Ohio	29.45	748.0	30.09	764.3	61	16.1	82	N	6	2.7		0	Fog		Calm	Inap.	Inap.	Clear	
Cleveland, Ohio	29.44	747.8	30.15	765.8	64	17.8	78	N	12	5.4			10s		N	Inap.	Inap	Threatening	
Concho, Texas	28.17	715.5	29.73	755.1	63	17.2	94	NE	4	1.8		8cs		NE		0	0	Cloudy	
Corsicana, Texas	29.62	752.3	30.08	764.0	70	21.1	95	NE	3	1.3			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.62	752.3	30.27	768.8	56	13.3	74	NE	4	1.8		0	0			0	0	Clear	
Denison, Texas	29.35	745.5	30.14	765.5	63	17.2	100	NE	2	0.9			Fog		E	0	0	Foggy	
Denver, Colorado	24.79	629.6	30.12	765.0	58	14.4	47	SE	4	1.8		0	5s		Calm	0	0	Fair	
Detroit, Michigan	29.50	749.3	30.17	766.3	55	12.8	74	N	7	3.1		Haze	8s	Calm	N	0	0	Fair	
Dodge City, Kansas	27.48	698.0	29.72	754.9	61	16.1	88	SE	10	4.5		0	2s		SE	0	0	Clear	
Dubuque, Iowa	29.54	750.3	30.25	768.3	52	11.1	86	E	1	0.4		0	0			0	0	Clear	
Duluth, Minnesota	29.52	749.8	30.20	767.1	56	13.3	80	E	4	1.8		Haze	5s	Calm	SE	0	0	Fair	
Eagle Pass, Texas	29.25	742.9	29.97	761.2	75	23.9	90	Calm	0	0			10s		S	0.16	4.1	Threatening	
Eastport, Maine	30.29	769.4	30.36	771.1	52	11.1	72	NE	6	2.7		0	0			0	0	Clear	
Erie, Pennsylvania	29.41	747.0	30.11	764.8	59	15.0	94	E	10	4.5			10n			1.02	25.9	Light rain	
Escanaba, Michigan	29.67	753.6	30.33	770.4	48	8.9	78	N	5	2.2		0	0			0	0	Clear	
Florence, Arizona	28.23	717.0	29.83	757.7	88	31.1	37	SE				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.12	612.6	30.12	765.0	58	14.4	44	NE	9	4.0		0	2s		NE	0	0	Fair	
Fort Craig, New Mexico	25.61	650.5			56	13.3	74	NW	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.59	751.8	30.12	765.0	65	18.3	89	E	1	0.4		0	0			Inap.	Inap.	Clear	
Fort Griffin, Texas	28.85	732.8	30.01	762.2	59	15.0	88	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.90	734.0	30.00	762.0	59	15.0	87	N	3	1.3		0	0			0	0	Clear	
Fort Sully, Dakota	28.17	715.5	29.75	755.6	67	19.4	69	SE	16	7.2			10s		SE	0.09	2.3	Cloudy	
Galveston, Texas	30.01	762.2	30.05	763.3	78	25.6	95	NE	6	2.7		5ck;k	0	W; S		1.63	41.4	Fair	
Grand Haven, Michigan	29.50	749.3	30.15	765.8	54	12.2	73	E	3	1.3		0	Fog		Calm	0	0	Foggy	
Indianapolis, Indiana	29.42	747.3	30.19	766.8	57	13.9	93	NE	5	2.2		0	8s		NE	0.01	0.3	Fair	
Indianola, Texas	30.04	763.0	30.06	763.5	78	25.6	86	NE	10	4.5		2k	5ks	S	S	0.45	11.4	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.02	762.5	30.05	763.3	79	26.1	82	SE	2	0.9		0	0			0	0	Clear	
Keokuk, Iowa	29.58	751.3	30.19	766.8	59	15.0	81	NE	6	2.7		0	Fog		Calm	0	0	Fair	
Key West, Florida	29.97	761.2	30.01	762.2	83.0	28.3	70	E	6	2.7		1k	1ks	E	E	0.01	0.3	Clear	
Kittyhawk, North Carolina	29.97	761.2	30.00	762.0	77	25.0	90	SW	10	4.5			10s		SW	0	0	Cloudy	
Knoxville, Tennessee	29.09	738.9	30.07	763.8	65	18.3	78	NW	5	2.2			10ks		NW	0.88	22.4	Cloudy	
La Crosse, Wisconsin	29.50	749.3	30.23	767.8	57	13.9	75	SE	2	0.9		0	0			0	0	Clear	
La Mesilla, New Mexico	26.10	662.9	30.24	768.1	67	19.4	59	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					77	25.0	90	E	2	0.9		10ck	0	Calm		0.52	13.2	Cloudy	
Leavenworth, Kansas	29.31	744.5	30.15	765.8	59	15.0	94	Calm	0	0			Fog			0	0	Dense fog	
Los Angeles, California	29.51	749.5	29.84	757.9	61	16.1	88	N	2	0.9			Fog			0	0	Foggy	
Louisville, Kentucky	29.58	751.3	30.14	765.5	61	16.1	94	N	8	3.6		0	Fog		Calm	0	0	Clear	
Lynchburg, Virginia	29.34	745.2	29.99	761.7	72	22.2	85	NW	1	0.4			10ks		N	0.33	8.4	Cloudy	
Maricopa Wells, Arizona					80	26.7	46	NW				0	5ks		Calm	0	0	Fair	
Marquette, Michigan	29.58	751.3	30.29	769.4	54	12.2	73	Calm	0	0		0	0			0	0	Clear	
Mason, Texas	28.51	724.1	30.26	768.6	65	18.3	94	Calm	0	0		5ck	2s	E		0	0	Fair	
Memphis, Tennessee	29.85	758.2	30.17	766.5	66	18.9	90	N	4	1.8		0	Fog		Calm	0.15	3.8	Clear	
Milwaukee, Wisconsin	29.61	752.1	30.30	769.6	59	15.0	81	Calm	0	0		5ck	Sm'e	NW	SE	0	0	Fair	
Mobile, Alabama	30.04	763.0	30.08	764.0	76	24.4	95	S	4	1.8		0	Haze		NE	Inap.	Inap.	Hazy	
Montgomery, Alabama	29.86	758.4	30.09	764.3	72.5	22.5	90	NW	3	1.3			10ks		NW	0.04	1.0	Threatening	
Morgantown, West Virginia	29.01	736.8	30.04	763.0	62	16.7	94	NW	4	1.8			10n		NW	0.06	1.5	Light rain	
Mt. Washington, N. H.	24.08	611.6	30.44	773.2	41	5.0	38	E	7	3.1		0	2s		Calm	0	0	Clear	
Nashville, Tennessee	29.62	752.3	30.14	765.5	66	18.9	90	N	2	0.9			10s		N	0.03	0.8	Cloudy	
New Haven, Connecticut	30.05	763.3	30.16	766.1	56	13.3	93	NE	18	8.0			10n			0.20	5.1	Light rain	
New London, Connecticut	30.17	766.3	30.22	767.6	59	15.0	100	NE	8	3.6			10n		NE	0.08	2.0	Light rain	
New Orleans, Louisiana	30.01	762.2	30.07	763.8	78.5	25.8	84	Calm	0	0		1c	1s	W	Calm	0.53	13.5	Fair	
Newport, Rhode Island	30.15	765.8	30.20	767.1	61	16.1	94	NE	10	4.5			10n		NE	0.02	0.5	Light rain	
New York, New York	29.99	761.7	30.17	766.3	59	15.0	94	N	20	8.9			10n		Calm	0.62	15.7	Light rain	
Norfolk, Virginia	29.93	760.2	29.99	761.7	69	20.6	100	S	4	1.8			10n		Calm	2.38	60.5	Light rain	
North Platte, Nebraska	27.05	687.1	29.53	750.0	60	15.6	85	SE	24	10.7		0	0			0	0	Clear	
Olympia, Washington Ter.	30.08	764.0	30.12	765.0	42	5.6	91	S	3	1.3		0	Fog		Calm	0	0	Fair	
Omaha, Nebraska	29.62	737.1	30.07	763.8	61	16.1	94	SE	5	2.2		0	Haze		Calm	0	0	Clear	
Oswego, New York	29.92	760.0	30.24	768.1	60	15.6	88	SE	6	2.7			10n		Calm	0.07	1.8	Light rain	
Pembina, Dakota	29.04	737.6	29.84	757.9	62	16.7	80	SE	16	7.2			10s		SE	0	0	Cloudy	
Philadelphia, Pennsylvania	30.01	762.2	30.06	763.5	62	16.7	94	NE	23	10.3			10n		NE	0.82	20.8	Light rain	
Phœnix, Arizona					77	25.0	45	Calm				8k	0	S		Inap.	Inap.	Cloudy	
Pike's Peak, Colorado	18.05	458.5	30.26	768.6	29	— 1.7	89	SW	33	14.8		0	5s		SW	0	0	Fair	
Pioche, Nevada	24.05	610.9	29.82	757.4	52	11.1	17	NW	3	1.3		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.03	762.7	62	16.7	94	N	3	1.3			10s		N	0.05	1.3	Cloudy	
Port Huron, Michigan	29.53	750.0	30.18	766.6	60	15.6	70	NE	10	4.5		0	Sm'e			0	0	Clear	
Portland, Maine	30.30	769.6	30.34	770.6	56	13.3	74	NE	14	6.3		5k	Haze	Calm		0	0	Fair	
Portland, Oregon	30.08	764.0	30.18	766.6	47	8.3	100	SE	1	0.4			Fog		Calm	0	0	Foggy	
Prescott, Arizona					65	18.3	45	Calm				0	0			0.20	5.1	Clear	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	80	26.7	78	E	8	3.6		5cs	0	Calm		0	0	Fair	
Red Bluff, California	29.48	748.8	29.82	757.4	72	22.2	30	N	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.58	751.3	30.19	766.8	59	15.0	94	SE	7	3.1			10s; sm		SE; Calm	0.32	8.1	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.54	750.3	30.12	765.0	45	7.2	87	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.73	755.1	29.81	757.2	59	15.0	70	S	2	0.9		0	0			0	0	Clear	
St. Louis, Missouri	29.63	752.6	30.20	767.1	62	16.7	88	N	7	3.1		0	Fog		Calm	0	0	Clear	
St. Marks, Florida	30.04	763.0	30.05	763.3	75	23.9	95	Calm	0	0		0	0			0	0	Clear	
St. Paul, Minnesota	29.32	744.7	30.14	765.5	57	13.9	75	SE	4	1.8		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.61	650.5	29.94	760.5	57	13.9	52	N	4	1.8		0	0			0.10	2.5	Clear	
San Antonio, Texas	29.37	746.0	29.94	760.5	72	22.2	90	Calm	0	0		0	Haze		E	0.05	1.3	Cloudy	
San Diego, California	29.80	756.9	29.87	758.7	65	18.3	83	NW	1	0.4			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.50	749.3	30.17	766.3	63	17.2	78	NE	20	8.9			10ks		NE	0	0	Cloudy	
Sandy Hook, New Jersey	30.10	764.5	30.12	765.0	59	15.0	94	NE	31	13.9			10n		NE	1.38	35.1	Light rain	
San Francisco, California	29.80	756.9	29.86	758.4	53	11.7	93	SW	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	53	11.7	59	E	4	1.8		Haze	1s		Calm	0	0	Fair	
Savannah, Georgia	29.94	760.5	30.03	762.7	83	28.3	74	SW	9	4.0		0	0			0	0	Clear	
Shreveport, Louisiana	29.89	759.2	30.10	764.5	70	21.1	95	N	4	1.8			10s		Calm	0 63	16.0	Cloudy	
Smithville, North Carolina	30.00	762.0	30.04	763.0	78	25.6	90	Calm	0	0		8cs	2ks	NW	S	0.17	4.3	Cloudy	
Springfield, Massachusetts	30.07	763.8	30.20	767.1	58	14.4	69	N	6	2.7			10s		NE	0	0	Cloudy	
Stanwix, Arizona																			
Stockton, Texas					68	20.0	90	Calm	0	0		0	1s		Calm	0	0	Clear	
Thatcher's Island, Mass	30.22	767.6	30.28	769.1	60	15.6	88	NE	16	7.2			10s		NE	0	0	Cloudy	
Toledo, Ohio	29.52	749.8	30.20	767.1	53	11.7	79	W	7	3.1		0	8s		NW	0	0	Cloudy	
Tucson, Arizona	27.51	698.7	30.06	763.5	73	22.8	63	S				0	5ks		W	0	0	Fair	
Tybee Island, Georgia	29.99	761.7	30.02	762.5	80	26.7	86	S	8	3.6		2k	Haze	SW	Calm	0	0	Fair	
Umatilla, Oregon	29.82	757.4			47	8.3	71	E	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.88	758.9	30.14	765.5	70	21.1	95	NE	8	3.6			10s		Calm	0.98	24.9	Cloudy	
Virginia City, Montana	24.29	617.0	29.77	756.1	40	4.4	73	W	12	5.4			10s		Calm	0.20	5.1	Cloudy	
Yisalia, California	29.47	748.5	29.84	757.9	56	13.3	68	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C.	29.91	759.7	30.02	762.5	63	17.2	100	NE	8	3.6			10n		NE	1.65	41.9	Light rain	
Wickenburg, Arizona					70	21.1	56	E				0	0			0	0	Clear	
Wilmington, N. Carolina	29.94	760.5	30.02	762.5	76	24.4	95	S	2	0.9			10s		W	0	0	Cloudy	
Winnemucca, Nevada	25.68	652.3	30.04	763.0	42	5.6	49	NE	4	1.8		0	0			0	0	Clear	
Wood's Holl, Mass	30.16	766.1	30.22	767.6	63	17.2	94	NE	5	2.2			10		NE	0	0	Threatening	
Yankton, Dakota	28.78	731.0	30.04	763.0	59	15.0	88	SE	7	3.1		0	0			0	0	Clear	
Yuma, Arizona	29.56	750.8	29.72	754.9	75	23.9	30	SW	4	1.8		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.70	754.4	29.75	755.6	56.0	13.3	97	SW	10	4.5		0	0			0	0	Clear	J. Fortescue. W. Wood.
Havana, Cuba, W. I.	29.96	761.0	29.98	761.5	82	27.8	75	NE	4.8	2.1		2cs	0	Calm		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	80	26.7	78	Calm	0	0		2ck	2s	SE		0.02	0.5		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.86	758.4	29.94	760.5	83.5	28.6		NE			1					0	0	Clear	F. M Everett.
St. Thomas, W. I.					83	28.3		E				2ck	2k	E	E	0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.83	757.7	29.85	758.2	80	26.7	86	E				10k	0						L. V. Bigard.
Bridgetown, Barbados, W. I	29.98	761.5	30.00	762.0	80	26.7	82	NE	2	0.9		0	5ks			0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.01	762.2	83	28.3	75	E			2	3c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			
Medellin, Colombia, S. A.	25.22	640.6			67.2	19.6	80	Calm			0	2k	7s;ks			0.06	1.5	Cloudy	Dr. H. Groot.
Honolulu, Oahu, H. I.	30.09	764.3	30.11	764.8	73.5	23.1		NE			3					0.01	0.3		Thomas Herran.
Makawao, Maui, H. I.																			Daniel Smith.
																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,480 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672. m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.87	758.7	57	13.9	55	12.8	87	NW	4	1.8			2		W	0	0			Light fog	
Navy Yard, Pensacola, Fla.	30.22	767.6			80	26.7	82	N	4	1.8			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.32	770.1	64	17.8	55	12.8	80	NE	9	4.0			10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	30.08	764.0	71	21 7	68.5	20.3	77	ENE			2		2k;s		E	0.04	1.0			Fair	
Adams, Rio de Janeiro, Brazil	30.20	767.1	71	21.7	69	20.6	95	SSE			1		2		SE	0	0			Hazy	
Alert, Yokohama, Japan	30.25†	768.3†	73	22.8	73	22.8	100	E			2		2		NE			Smooth		D. clouds	
Alliance, Smyrna, Turkey	29.94†	760.5†	85	29.4	86	30.0	51	NNE			1–2		3		Calm					Clear	
Ashuelot, Che-foo, China	30.02	762.5	79	26.1	75	23.9	77	SSE			3		5		SSE					Lightning	
Canonicus, New Orleans, La	30.09	764.3	56	13.3	78	25.6	86	ESE			2		3							Fair	
Colorado, New York, N. Y.	30.19	766.8	59	15.0	60	15.6	94	NNE	8	3 6			10		NNE	0.58	14.7			Raining	
Despatch, Constantinople, Turkey	30.25	768.3	74	23.3	71	21.7	73	NE			4		7		NE			Smooth		Cloudy	
Essex, N. 39° 43′, W. 38° 20′	30.15	765.8	76	24.4	79	26.1	80	W			4		2					Smooth	W	D. clouds	
Franklin, Norfolk, Va.	30.05	763.3	70	21.1	71	21.7	100	SSE	11.5	5.1			3		S&E	2.	51.			D. clouds	
Frolic, S. 22° 42′, W. 40° 41′	30.34	770.6	70	21.1	73	22.8	90	NE			4		3ks		N&E	Light	Light	Moderate.	N&E	D. clouds	
Gettysburg, N. 40° 56′, E. 13° 05′	29.93‡	760.2‡			80	26.7	91	ESE			3		1		Calm	0	0	Light	SE	D. clouds	
Kearsarge, N. 25° 02′, E. 119° 25′	30.02	762.5			82	27.8	96	SSW			5		3		SW	0	0	Smooth	S&W	D. clouds	
Lackawana, Neeah Bay, W. T.	30.17	766.3			54	12.2	80	Calm			0		1		N&W			Ground	W	D. clouds	
Marion, Constantinople, Turkey	30.15	765.8	73	22.8	73	22.8	67	NE			4		8		NE	Light	Light	Chop	NE	D. clouds	
Michigan, Erie, Pa.	29.65	753.1	60	15.6	60	15.6	82	ENE			1		10		E					Cloudy	
Monocacy, Yokohama, Japan	30.10	764 5	70	21.1	72	22.2	90	NE			1		1		N	0	0			D clouds	
New Hampshire, Port Royal, S. C.	30.24	768.1			81	27.2	87	SSW	5	2.2			4		SE	0	0			D. clouds	
Omaha, S. 24° 10′, W. 70° 53′	30.13	765.3	63	17.2	61.5	16.4	80	S	1	0.4			10		Calm	0	0	Long	S	Cloudy	
Onward, Callao, Peru	30.09†	764.3†	67	19.4	64.5	18.1	81	SE			1		10					Long	W	D. clouds	
Ossipee, Norfolk, Va.	30.07	763.8	66	18.9	72	22.2	90	SSW			1		10		Calm					D. clouds	
Palos, Shanghai, China	29.94	760.5	76	24.4	75	23.9	86	WSW			2		10		WSW	Blank	Blank			Overcast	
Plymouth, New York, N. Y.	30.40	772.1	64	17.8	69	20.6	56	ENE			5		10		NE					Rainy	
Ranger, N. 32° 17′, E. 128° 37′	30.05	763.3			79	26.1	82	SE			6		10		SE					Heavy rain	
Richmond, Boston, Mass.	30.36	771.1	60 8	16.0	57.5	14.2	94	NNE			3		10		Calm	0	0			Overcast	
Rio Bravo, Brownsville, Texas	29.88	758.9			76	24 4	100	NE			1		2		Calm					Blue sky	
Santee, Annapolis, Md.	30.09	764.3	66	18.9	65	18.3	94	E			4		10		SE	0.26	6.6			Overcast	
St. Louis, League Island, Pa	29.98	761 5	64	17.8	65	18.3	77	NE	13	5.8			10		NE	1.5	88.			Overcast	
Tennessee, Yokohama, Japan	30.10	764.5	73	22.8	71	21.7	71	ENE	15	6.7			0			0.01	0.3	Moderate.	E	Blue sky	
Trenton, Marseilles, France	29.99†	761.7†	82	27.8	80	26.7	66	SSE	20.2	9.0			4		S&E	0	0			D. clouds	
Vandalia, N. 34° 25′, E. 33° 26′	29.89	759.2	85	29.4	84	28.9	79	WSW			2		2		WNW					D. clouds	
Wabash, Boston, Mass.	30.30	769.6	59	15.0	58	14.4	88	NE	4	1.8			10		Calm	0	0			Overcast	
Wyoming, Washington, D. C.	30.25†	768.3†	69	20.6	66	18.9		NE			2		10		N					Drizzling	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			
Hong Kong, China.					82	27.8		SSW			4		7		SW			Rain-squalls	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 38° 38′, E. 154° 33′			29.97†	761.2†	68	20.0		NW			5		ks		NW	Long	NW	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 45° 8′, W. 42° 5′	SW by W½W		29.08	761.5	70.0	21.1	68	SSW			2		10			smooth		Overcast	Capt. A. Jaeger.
S. S. Ohio, N. 52° 56′, E. 4° 0′			29.88	758.9	57.0	13.9	63	NE			3		k		NE	smooth		Overcast	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 39° 28′, W. 71° 57′			*29.93	760.2*	69	20.6		ENE			7		10		ENE	Moderate.	ENE	Heavy rain.	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 39° 02′, W. 73° 21′	NE	0.5	29.97	761.2	67	19.4	100	SE	4	1.8			10n		SE	Heavy	NE	Heavy rain.	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 8, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.11	764.9	77.0	25.0	72	NNW			2		8			0.012	0.3	Cloudy	Michel.
Algiers			30.05	763.2	82.0	27.8	58	NW			3		10			0.039	1.0	Hidden	Peter.
La Calle			30.04	763.0	83.5	28.6	79	NE			3		5			0	0	Fair	Fleury.
Tunis			30.04	762.9	98.6	37.0		NE			5		2			0	0	Clear	Jacques.
Sfax			30.10	764.4	87.8	31.0		NE			3		0			0	0	Clear	Husson.
Saida			30.06	763.4	75.9	24.4		N			4		6			0	0	Fair	Millot.
Tebessa			30.10	764.5	91.6	33.1		S			3		0			0	0	Clear	Bourgeois.
Geriville			30.00	761.9	84.4	29.1	35	S			3		4			0	0	Fair	Lemaillot.
Laghount			30.02	762.5	98.6	37.0	24	W			6		2			Inap.	Inap.	Clear	François.
Biskra			30.04	763.0	107.7	41.5	18	SE			4		8			0	0	Cloudy	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.25	743.0	29.77	756.1	82.2	27.9	46	SW			5		5			0.088	2.1	Rainy	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.08	738.7	29.85	758.2	51.6	10.9	97	W			2		10			0.051	1.3		Dr. Wierzbiski.
Eperies	28.81	731.8	29.66	753.4	63.5	17.5	73	S			1		10s		Calm	0	0		Julius Mikolik.
Gratz	28.62	727.0	29.84	758.0	62.6	17.0	80	W			2		10			3.780	96.0		Andreas Rospini.
Hermannstadt	28.42	721.9	29.76	756.0	77.4	25.2	46	SE			3		7			0	0		Prof. Reissenberger.
Kremsmünster	28.53	724.7	29.86	758.5	54.7	12.6	85	ENE			3		10			0.295	7.5		Prof. C. Wagner.
Lemberg	28.68	728.4	29.63	752.6	66.9	19.4	83	SW			2		10			0.126	3.2		Dr. T. Stanecki.
Pola	29.78	756.3	29.88	759.0	81.1	27.3	72	SSW			1		7cks			0.194	4.92		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.52	749.8	29.79	756.6	69.8	21.0	78	W			2		10			0.222	5.65		Karl Stancel.
Trieste	29.78	756.5	29.89	759.1	76.3	24.6	86	W			1		2			0.571	14.5		P. Busin.
Vienna	29.19	741.4	29.88	758.9	57.0	13.9	85	NNW			2		10			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.43	722.2	29.95	760.7	49.8	9.9	99	NE			4		10			0.331	8.4		
Brussels	29.76	756.0	29.96	761.0	58.8	14.9	52	ENE			6	3	5	WSW	E	0.043	1.10		Royal Observatory.
Furnes	29.92	759.9	29.94	760.5	61.9	16.6	61	E			2		9			0	0		
Maeseyck	29.89	759.3	30.02	762.6	57.4	14.1	75	NE			6		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	30.06	763.5	30.16	766.1	53.1	11.7		ESE	9	4.0			2			0	0	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	30.12	765.0	30.13	765.3	57	13.9		NW			2		7					D. clouds	William McNeil.
Armagh, Observatory			30.10	764.5	54.7	12.6		E	7	3.1			6					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.06	763.5	57.1	13.9		E	24	10.7			7					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.03	762.7	60.0	15.6		ESE			2		3					Overcast	J. Dreyer.
Bradford, Yorkshire	29.76	755.9	30.14	765.5	55.8	13.2		NE			1		10			0.01	0.3		J. McLandsborough.
Bridgetown, (Barbados)																		D. clouds	Pvt. G. W. Roberts, A. H. Todd.
Cambridge, Observatory			30.02	762.5	62.0	16.7		E			2		2					D. clouds	John McLaren.
Cardington			30.02	762.5	62.0	16.7		E			2		4					Blue sky	F. Magawran, Q. M. Sergt. R.E.
Chatham, School M. E.	29.84	757.9	29.97	761.2	58.2	14.6		NE			5		7					Squally	Alexander Watt.
Dartmoor	28.41	721.6	29.88	758.9	52.0	11.1		NE			6		8			Blank	Blank		Francis Redford, M. A.
Davos Platz, (Switzerland)																		D. clouds	J. Mac Gowan.
Donaghadee	30.09	764.3	30.12	765.0	57	13.9		E			3		3					½ clouded	J. Costello.
Dover	29.94	760.5	29.97	761.2	59	15.0		E			5		4					Gloomy	Thomas Mackereth.
Eccles, (near Manchester)			30.07	763.8	55.7	13.2		NE	2.2	1.0			10					Raining	The Staff.
Falmouth, Observatory	29.58	751.3	29.81	757.2	55.0	12.8		ENE			6		10					D. clouds	Pvt. G. Salmon, A. H. C.
Fort Napier, (Natal)	27.65	702.3	29.82	757.4	96.3	35.7		E			3		8					Raining	
Free Town, (Sierra Leone)			30.03	762.7	77.0	25.0		W			0		5					D. clouds	B. G. Clare, for Prof. Curtis.
Galway, Queen's College			29.98	761.5	64	17.8		NE			1		6					D. clouds	Corpl. C. Aitken, A. H. C.
Gibraltar, (Mediterranean)	30.03	762.7	30.07	763.8	79.2	26.2		W			4		2					Hazy	D. G. Maclean.
Glasgow, Observatory	29.92	760.0	30.12	765.0	54.0	12.2		ESE			1		9					Blue sky	G. T. Watson.
Great Yarmouth	30.04	763.0	30.04	763.0	58	14.4		ENE			4		3					Nearly o'cast	The Staff, for G. B. Airy.
Greenwich, Royal Obs'y	29.81	757.2	29.98	761.5	59.0	15.0		ENE			5		9					Squally	Dr. S. E. Hoskins, F.R.S.
Guernsey	29.57	751.1	29.80	756.9	56	13.3		ESE			6		10			Blank	Blank	Raining	M. P. Moyle.
Helston			29.88	758.9	56	13.3		NE			6		10n			0.3	8.	D. clouds	John Tilston.
Holyhead	30.00	762.0	30.05	763.3	57	13.9		E			5		3					Raining	J. Fisher.
Jersey	29.50	749.3	29.79	756.7	54.5	12.5		E			6		10					Hazy	The Staff.
Kew, Observatory			29.98	761.5	58.4	14.7		ENE	26	11.6			8					D. clouds	George Mitchell.
Kingstown	30.06	763.5	30.09	764.3	57	13.9		E			5		5					D. clouds	Wm. J. Harrison, F.G.S.
Leicester, Museum			30.04	763.0	59.3	15.2		NE			2		4					D. clouds	Corp'l. P. Bravis, A.H.C.
Malta, (Mediterranean)	30.00	762.0	30.07	763.8	86.8	30.4		SE			1		4						W. D. Penny.
Nairn																Blank	Blank	D. clouds	C. S. Duncombe.
Nassau, (Bahamas)			29.98	761.5	83.5	28.6		SE			1		4					Overcast	E. J. Lowe, F. R. S.
Nottingham, Observatory	29.80	756.9	30.00	762.0	56.3	13.5		NE			3		10k;d		NE	0.010	0.25	D. clouds	Rev. Stephen Whitty.
Oscott, St. Mary's College	29.50	749.3	30.02	762.5	58.8	14.9		ENE			6		7					D. clouds	F. Lucas
Oxford, Radcliffe Obs'y			29.99	761.7	60	15.6		E			2		5					Overcast	John Merrifield.
Plymouth	29.76	755.9	29.83	757.7	57.0	13.9		E			6		10						W. Kennedy.
Roche's Point	29.92	760.0	29.97	761.2														D. clouds	John C. Walker.
Saint Ann's Head	29.77	756.1	29.93	760.2	58	14.4		E			5		3					Foggy	Rev. C. Clouston, LL. D
Sandwick Manse, (Orkneys)			30.14	765.5	52	11.1		W	14	6.3			10					D. clouds	Sergt. W. H. Lyne.
Scutari, Cemetery, (Turkey)			29.97	761.2	83.6	28.7		NE			1		4					Overcast	W. F. Cooper.
Sheffield	29.86	758.4	30.10	764.5	57.2	14.0		ENE			2		8			0	0	D. clouds	Rev. F. Redford, M. A.
Silloth Rectory	30.08	764.0	30.11	764.8	58.5	14.7	59	SE			2		6			0	0	Threatening	W. C. Carlisle, for Rev. S. J. Perry
Stonyhurst, Observatory					55.2	12.9		E			1		10					Blue sky	John Smith.
Stornoway, Lews C., (Hebr.)			30.08	764.0	53	11.7		SE			1		2					Squally	Rev. C. H. Griffith, F.M.S.
Stratfield Turgiss	29.75	755.6	29.97	761.2	57.5	14.2		E			3		7					Overcast	John Trotter.
Thurso			30.11	764.8	54	12.2		W			1		8					Raining	W. Newcombe.
Truro, Royal Institution			29.83	757.7	59	15.0		E			6		10					D. clouds	The Staff.
Valencia, Observatory			29.97	761.2	60.3	15.7		ENE	12	5.4			2						Henry Mercer.
Sub-Series.																			
Calf of Man, (Isle of Man)					55	12.8		E			3		5			0	0		The Staff, for E. J. Stone.
Cape Good Hope, Obs'y	29.89	759.2	29.93	760.2	61.6	16.4	92	SSE	4	1.8		10	10						Francis Abbott, F.R.A.S.
Hobart Town, (Tasmania)			29.94	760.5	53.0	11.7	80	NW			1		6k			0	0		Andrew Gibb.
Leith, Restalrig Park			30.15	765.8	58.0	14.4		E			1					0	0	Fine	C. Meldrum.
Mauritius, Observatory	29.99	761.7	30.18	766.6	73.3	22.9	73	ESE	14.3	6.4		0	7		ESE	0.05	1.8	Cloudy	R. L. J. Ellery.
Melbourne, Observatory	30.08	764.0	30.17	766.3	55.5	13.1	83	SE	7	3.1			6			0	0	Fine	J. Youngclause.
Monach L't-house, (Hebrides)			30.13	765.3	58	14.4		S			2	3	0	S		0	0		Robert Burnet.
North Unst, (Shetland Is.)			30.05	763.3	52	11.1		W			4		10						

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

MARINE SERIES. VESSELS.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria, N. 41° 20′, W. 57° 45′			30.14	765.5	68	20.0		ENE			3		10	WSW	E	*2.5	NE	Overcast	Capt. W. Watson
S. S. Batavia																			Capt. J. E. Moulland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 43° 30′, W. 58° 40′			30.18	766.6	60	15.6		ENE			4		9			2		Overcast	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 49° 59′, W. 49° 57′			30.06	763.5	56	13.3		NW			6		3			4	NW	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
San José	26.21	665.7			68.0	20.0	98	NE			2	1c	7ks	E	E	0.7	18.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.84	757.9	29.89	759.1	56.3	13.5	65	NNW			6		2						
Fanöe	29.99	761.8	30.01	762.3	57.0	13.9	71	NNW			6		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.53	750.1	29.58	751.2	51.6	10.9	87	S			6		10					Raining	
Thorshavn, (Faröe)	29.94	760.5	29.98	761.4	51.8	11.0	91	W			6		10						
Vestervig	29.76	756.0	29.93	760.3	55.4	13.0	74	WNW			6		0						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.29	744.0	29.84	758.0	60.8	16	94	ENE			3		10		W	0.87	22.	Covered	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.77	756.1	29.85	758.1	83.5	28.6	55	SE			3				S	0.063	1.6	Heavy cl'ds	Mr. Giraud, Director.
Bar-sur-Seine	29.24	742.8	29.79	756.6	71.4	21.9	74	N			2		8kn		SSW	0.402	10.2	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.60	751.9	29.89	759.1	54.5	12.5	95	E			3		10		E	1.230	31.25	Covered	Normal School.
Besançon	28.98	736.1	29.85	758.1	73.8	23.2	62	SSW			2		5		SW	0.807	20.5	Cloudy	Normal School.
Bourg-en-Bresse	28.88	733.5	29.80	757.0	77.0	25	61	S			2		5kn		W	0	0	Cloudy	Normal School.
Bourges, Normal School	29.23	742.5	29.76	755.9	73.0	22.8	73	S			3		8		SW	0.059	1.5	Very cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.41	747.1	29.63	752.6	60.6	15.9	89	SE			3		10		SE	0.118	3.00		The Staff.
Carcassonne, Normal School	29.35	745.6	29.75	755.6	85.3	29.6	62	ESE			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoullé, Director.
Châlons-sur-Marne, N. Sch'l	29.56	750.7	29.87	758.7	57.2	14.0	89	NE			3		10n		E	3.050	77.5	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.47	723.0	29.75	755.7	74.7	23.7	50	S			3		10		S	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.04	737.5	29.92	759.9	54.3	12.4	15	E			4		10		E	0.94	24.	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.81	731.7	29.95	760.7	80.8	27.1	52	SW			6		8		SW	Inap.	Inap.	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.57	751.0	29.77	756.2	67.3	19.6	74	S			2		8		S	0.173	4.4	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.50	749.4	29.81	757.1	59.5	15.3	93	E			2		10			0.837	21.25	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.91	734.2	29.78	756.4	75.7	24.3	59	S			1		2			0.618	15.7	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	29.65	753.1	29.75	755.6	65.1	18.4	86	S			3		10			0.075	1.9	Covered	T. Carré, Director.
Mâcon, Normal School	29.11	739.4	29.78	756.3	73.6	23.1	66	SE			2		5		W	0.598	15.2	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.80	731.5	29.82	757.3	62.2	16.8	82	N			1		10		N	0.819	20.8	Covered	Normal School.
Nismes, Normal School	29.71	754.5	29.80?	757.0?	83.3	28.5	66	S			6		5		S	0	0	Cloudy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.59	751.6	29.83	757.7	55.6	13.1	88	ENE			2		10kn		ENE	0.875	22.22	Covered	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.77	756.1	29.80	756.9	71.2	21.8	67	WSW			3		8		SW	0.04	1.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.78	756.3	29.86	758.5	56.1	13.4	85	NE			6		10		NE	0.594	15.1	Covered	F. Lucard, Director.
Tarbes, Normal School	28.80	731.5	29.84	757.8	73.4	23	69	NW			2		2		W	0.08	2.	Slightly cl'dy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.86	758.4	80.6	27.0	70	SSE			2		5			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.82	630.4	30.13	765.4	61.3	16.3	53	SW	20.5	9.17			2		SW	0.067	1.7		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.55	750.5	29.82	757.5	55.2	12.9	95	E			3		10		NE	1.134	28.8	Sprinkling	Marié Davy, Director.
Perpignan			29.71	754.5	83.7	28.7	48	NE	11.2	5.00			3		SW	0.016	0.4		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.24	539.6			40.8	4.9		S			4		4					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.47	570.8			47.1	8.4		S			3		4			0.142	3.6	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.67	753.6	29.84	757.8	56.3	13.5	94	NE			1		10		E	0.657	16.7		E. Renou.
Toulouse, Observatory	29.13	739.8	29.85	758.2	74.1	23.4	54	NNW			4		7			0.291	7.4		The Staff.
Tours	29.56	750.8	29.76	755.8	73.0	22.8	76	E			1		8		W	0.921	23.4		C. Marquet.
Versailles, (near Paris)			29.84	758.0	55.4	13.0	88	E			1		10			1.048	26.62	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.90	759.4	29.93	760.1	72.0	22.2	93	W	2.9	1.3			8k			0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.: local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg																			Prof. T. Hoh.
Berlin	29.80	756.9	29.97	761.2	59.7	15.4	47	N			1		2			0.071	1.80		Prof. Arndt.
Breslau	29.39	746.4	29.91	759.8	56.1	13.4	53	NW			5		6			0.837	21.26		Royal University Obs'y.
Carlsruhe	29.47	748.6	29.90	759.5	52.0	11.1	97	NE			3		10			2.259	57.4	Heavy rain.	Albert Senz.
Cassel	29.41	747.0	30.02	762.4	58.5	14.7	50	NNE			3		2	N		0	0		Dr. H. Möhl.
Crefeld	29.81	757.1	29.97	761.2	60.8	16.0	48	E			3		4k			0	0		Director Lose.
Emden	30.00	762.1	30.04	763.0	61.2	16.2	56	NNE			4		2			0.051	1.3		Prof. Prestel.
Frankfort on the Main	29.65	753.2	30.02	762.4	59.5	15.3	62	ESE			2		9			0.264	6.7		Physical Society.
Friedrichshafen	28.49	723.6	29.88	759.0	66.6	19.2	86	SSW			3		10	W		0.386	9.8	Raining	M. Wilhelm.
Hamburg	29.95	760.8	30.02	762.6	58.8	14.9	50	NNW			4		4k	NW		0	0	Fair	Captain F. Hegemann.
Kiel	29.98	761.6	30.00	762.0	59.2	15.1	76	NW			2		2			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.56	750.8	29.63	752.6	54.0	12.2	72	NW			2								Prof. E. Luther.
Köslin			29.83	757.7	56.1	13.4		NW			4		2			0.063	1.6		H. Müller.
Leipsic, Observatory	29.61	752.1	30.03	762.7	57.6	14.2	53	NE			1		8	NNW		0.559	14.2		Prof. Bruhns.
Memel, Naval School	29.57	751.1	29.62	752.3	52.5	11.4	66	WNW			6–7		7k						Reinbrecht von Skalweit.
Neufahrwasser	29.72	754.8	29.73	755.2	56.5	13.6	56	NW			5		5			0	0		A. Lothes.
Posen	29.64	752.8	29.93	760.2	56.7	13.7	43	NW			6–7		2			Blank	Blank		Dr. Magener.
Strassburg Obs., (in Alsace)	29.37	746.1	29.92	760.0	55.6	13.1	92	NE			4		10			0.075	1.91		Dr. Schur.
Stuttgart	28.96	735.6	29.91	759.6	56.5	13.6	87	N			1		10	E		0.043	1.1	Raining	Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.45	722.5	29.96	760.9	52.9	11.6	79	ENE			2		10	NE		0.547	13.9		Dr. Von Bebber.
Wustrow, Naval School	29.95	760.7	29.98	761.5	61.2	16.2	60	W			2		0			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.67	753.7	30.02	762.6	86.4	30.2		SW										Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.67	753.6	29.72	754.8	83.2	28.4	75	SW	21.07	9.47			1		SW	0	0	D. clouds	
Deesa																			
Bombay	29.77	756.1	29.80	757.0	83.9	28.8	75	WNW	11.0	4.9			10	W		0	0	Misty	
Poona	27.70	702.8	29.68	753.9	80.4	26.9	69	NW					10		W	0	0	Cloudy	
Lahore	28.85	732.9	29.57	751.1	93.1	33.9	53	Calm	5.2	2.3			8			0.13	3.3	Cloudy	
Belgaum	27.33	694.2	29.80	759.1	73.1	22.8	93	W	9.0	4.0			10		W	0.47	11.9	Overcast	
Bangalore																			
Roorkee	28.69	728.7	29.56	750.7	93.6	34.2	53	NE	3.0	1.3			1			0.02	0.5		
Agra	29.02	737.0	29.56	750.7	97.7	36.5	75	SW					8		SW	0	0		
Trichinopoly																			
Nagpur	28.64	727.4	29.68	753.8	79.6	26.4	91	Calm	4.5	2.0			9			0.10	2.5	Drizzling	
Madras																			
Lucknow	29.21	741.9	29.57	751.0	94.1	34.5	49	ENE	2.4	1.1			10		ESE	0	0	Overcast	
Allahabad	29.28	743.8	29.59	751.6	81.9	27.7	91	N	2.9	1.3			10		NE	0.11	2.8	Overcast	
Patna	29.38	746.2	29.56	750.7	87.2	30.7	76	E	1.7	0.8			6	E	E	0.02	0.5	D. clouds	
Hazaribagh	27.56	700.0	29.56	750.7	78.0	25.6	91	ESE	9.8	4.4			10			0.67	17.0	Thunder-storm	
Cuttack	29.49	748.9	29.57	751.0	84.3	29.1	79	SSW	11.5	5.1			7			0	0	D. clouds	
Calcutta (Alipore)	29.61	752.1	29.63	752.7	83.9	28.8	83	N	2.0	0.9			10		S	0	0	Overcast	
Goalpara	29.30	744.2	29.69	754.0	79.9	26.6	92	ESE	4.1	1.8			10	S	S	0.21	5.3	Overcast	
Chittagong	29.71	754.7	29.86	757.0	78.6	25.9	92	SSW	9.0	4.0			10			0	0	Overcast	
Sibsagar	29.41	747.0	29.84	758.0	76.6	24.8	95	ESE	3.1	1.4			10	SW	SW	2.36	59.9	D. clouds	
Rangoon																			
Jubbulpore	28.31	719.1	29.68	753.9	75.5	24.2	86	NW	3.3	1.5			10	NW	NW	1.07	27.2	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.24	565.0	29.94	760.5	50.2	10.1	99	NW			2		10			0	0		Ab. Dom. Morgini.
Stelvio	22.19	563.7	29.89	759.3				NW			2		7	ENE		0.236	6.0		Signora Ernesta Manfredi.
Udine	29.47	748.4	29.80	758.5	73.4	23.0	74	NW	2.5	1.1			10			0.661	16.8		Prof. Giovanni Clodig.
Padua	29.73	755.1	29.84	757.8	75.4	24.1	69	SW	8.1	3.6			5	SW		0.732	18.6		Prof. Dott. Lorenzoni.
Vicenza	29.64	752.8	29.82	757.5	77.7	25.4	68	SW	9.4	4.2			5	W		0.480	12.2		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.58	726.0	29.85	758.2	74.1	23.4	60	S			1		6			0	0		Prof. Trionfini Carlo.
Domodossola	28.87	733.4	29.86	758.5	70.5	21.4	63	S			4		7			0.051	1.3		Prof. Giuseppe Calza.
Milan	29.42	747.3	29.91	759.8	75.4	24.1	64	W			1		3	WNW		0.071	1.8		Ab. Gio. Capelli.
Pavia	29.57	751.0	29.90	759.4	72.0	22.2	62	W			1		9			0.157	4.0		Prof. Gio. Cantoni.
Moncalieri	29.04	737.6	29.91	759.7	70.5	21.4	56	NNE	0.7	0.3			9	SW		0	0		Prof. P. F. Denza.
Mondovi	28.04	712.2	29.84	757.8	65.1	18.4	71	NW			2		10			0.146	3.7		Prof. D. C. Bruno.
Porto Maurizio	29.68	753.8	29.89	759.3	73.9	23.3	77	E			4		9	SW		0.476	12.1		Prof. L. Vassallo.
Genoa	29.73	755.2	29.89	759.3	78.4	25.8	70	SE	6.9	3.1			8	SE		1.028	26.1		Prof. G. M. Garibaldi.
Piacenza	29.64	752.9	29.89	759.2	71.8	22.1	68	E			2		8			0.244	6.2		Dott. G Manzi.
Parma	29.59	751.6	29.90	759.4	73.4	23.0	66	NW			4		9			0.650	16.5		Prof. P. Pigorini.
Florence	29.69	754.1	29.93	760.3	88.2	31.2	42	W			4		8	SW		0	0		Cav. F Meucci.
Leghorn	29.86	758.4	29.94	760.5	83.5	28.6	64	WSW	6.9	3.1			6			0	0		Prof. P. Monte.
Siena	28.78	731.1	29.93	760.7	84.2	29.0	44	SW	6.9	3.1			10	SW		0.146	3.7		Prof. L. Toscani.
Urbino	28.41	721.6	29.90	759.5	83.8	28.8	55	SW			4		5			0	0		Prof. P. Serpieri.
Pesaro	29.83	757.6	29.87	758.8	87.3	30.7	59	SW	16.1	7.2			7	SW		0	0		Prof. Luigi Guidi.
Ancona	29.77	756.1	29.90	759.4	87.8	31.0	36	SSW			6		10	SW		0	0		Prof. F. DeBosis.
Grosseto	29.91	759.6	30.01	762.3	84.2	29.0	76	SW			4		8	SSW		0.047	1.2		Avv. P. Ponticelli.
Rome	29.83	757.6	30.00	761.9	85.1	29.5	58	S	15.0	6.7			6			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U	29.88	759.0	30.08	763.9	86.7	30.4	48	SW			2		9	W		0	0		Prof. L. Palmieri.
Lecce	29.86	758.4	30.10	764.5	84.6	29.2	44	WNW	12.5	5.6			7			0	0		Prof. C. DeGiorgi.
Cosenza	29.22	742 2	30.06	763.5	89.2	31.8	39	NNW	4.9	2.2			0			0	0		Prof. F. D. Conti.
Cagliari	29.74	755.3	29.92	759.9	88.2	31.2	55	S			2		5	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.95	760.7	30.00	761.2	83.1	28.4	72	SE			2		8	SE		0	0		Prof. F. Cafiero.
Palermo	29.78	756.5	30.02	762.6	84.7	29.3	67	ENE	3.8	1.7			3			0	0		Prof. G. Cacciatore.
Caltanissetta	28.17	715.6	30.01	762.3	84.0	28.0	29	SSW			4		4	SE		0	0		Prof. A. Pagani.
Syracuse	29.94	760.4	30.01	762.3	86.7	30.4	61	SW			6		4	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.54	750.4	30.10	764.5	84.6	29.2	53	WNW	3.8	1.7			8	NW		0.063	1.6		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																				The Observatory.
Tokio (Yeddo) University	30.03	762.7	30.11	764.8	66.0	18.9	89	Calm	0	0			6ks			0	0	Fair		Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.11	587.1	30.11	764.7	55.0	12.8	82	NW	1.2	0.55		0	0			0.04	1.0	Fair		Mariano Bárcena
																				Vicente Reyes.
																				Miguel Perez.
																				(Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	30.00	762.1	30.00	762.1	59.7	15.4		ENE			4					0	0			
Groningen	29.98	761.5	30.04	762.9	59.5	15.3		N			2					0	0			
Helder	30.04	763.0	30.04	763.0	58.1	14.5		NNE			4					0	0			
Utrecht	29.99	761.8	30.04	763.0	61.2	16.2	53	ENE			4		5			0	0	Cloudy		H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.92	760.0	29.98	761.4	51.8	11.0	82	Calm	0	0			8			0.157	4.0	Raining	
Brönö	29.77	756.1	29.81	757.1	47.8	8.8	80	S	18	8			10			0	0	Light fog	
Christiania	29.71	754.7	29.86	758.4	59.7	15.4	32	NNW	7	3			0			0.047	1.2		
Tromsö	29.59	751.6	29.63	752.7	50.4	10.2	67	SW	9	4			9			0	0		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.90	759.4	30.09	764.2	72.0	22.2	86	W	11.2	5.0			2			0	0		Dr. J. A. Sampaio
Campo Major	29.00	736.7	30.02	762.5	67.1	19.5	60	WSW	13.7	6.1			6	WSW		0.091	2.3		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.10	764.6	30.19	766.8	73.4	23.0	59	ESE	4.9	2.2			6			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.68	753.8	30.03	762.8	68.2	20.1	69	SW	23.7	10.6			5			0.134	3.4		The Staff.
Ponta Delgada, (Azores)	30.06	763.5	30.13	765.3	75.2	24.0	77	W	4.3	1.9			4			0.067	1.7		

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

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

RUSSIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Warsaw	29.34	745.1	29.75	755.7	50.0	10.0	91	W	9	4			9						Astronomical Obs.
Wilna	29.16	740.6	29.58	751.2	49.5	9.7	96	W	2	1			10					Raining	Astronomical Obs.
Dorpat	29.19	741.3	29.43	747.4	49.1	9.5	96	NW	7	3			10					Raining	Physical Cabinet.
St. Petersburg	29.50	749.4	29.52	749.8	51.4	10.8	93	ESE	13	6			10					Light rain	Central Physical Obs.
Knopio	29.24	742.8	29.56	750.7	54.0	12.2	96	SE	13	6			10					Raining	Ch. Forsten.
Zieff	29.13	740.0	29.74	755.5	68.2	20.1	48	S	31	14			7						Physical Cabinet.
Nikolaiev	29.98	761.5	30.05	763.3	72.7	22.6	43	S	22	10			3						Kurdakof.
Kertch	30.09	764.2	30.11	764.7	70.5	21.4	55	ESE	11	5			3						Lagorio.
Moscow	29.41	747.1	29.95	760.7	63.5	17.5	52	S	13	6			7						Meteorological Obs.
Lugan	29.91	759.8	30.11	764.9	67.8	19.9	34	SE	13	6			3						Meteorological Obs.
Archangel	29.82	757.4	29.84	757.9	51.3	10.7	85	ESE	7	3			10						Ogorodnikof.
Tiflis	28.61	726.8	29.97	761.1	80.1	26.7	29	N	4	2			5						Physical Observatory.
Astrakhan	30.23	767.7	30.14	765.6	63.5	17.5	47	NNW	13	6			8			Blank	Blank		Sebastianof.
Kasan	29.82	757.3	30.08	764.1	58.6	14.8	50	NNW	4	2			3						Physical Cabinet.
Orenburg	29.57	751.0	29.92	759.9	71.8	22.1	85	NE	13	6			0						Tschernischef.
Ekaterinburg	29.00	736.6	29.94	760.5	52.9	11.6	59	ENE	7	3			10						Meteorological Obs.
Nukuss	29.47	748.6	29.69	754.1	92.1	33.4	41	NE	0	0			1						
Kasaly																			Bobrof.
Tashkend	28.17	715.4	29.78	756.4	78.3	25.7	68	Calm	0	0			5						Michelson.
Barnaul	29.30	744.2	29.81	757.1	59.9	15.5	72	SE	0	0			5						Meteorological Obs.
Yeniseisk	29.55	750.5	29.69	754.2	53.6	12.0	87	Calm	0	0			1						Marks.
Irkutsk																			Uselzef.
Oorga																			Mossin.
Peking, (China)	29.62	752.4	29.76	756.0	71.6	22.0	76	Calm	0	0			5						Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					60.8	16.0	95	Calm	0	0			10						

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

SPANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.78	705.6			64.8	18.2	63	SW	17.2	7.67		0	7			0.835	21.2	Almost cov'd	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.5	29.98	761.6	80.8	27.1	84	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.02	762.6	30.12	765.1	73.0	22.8	60	WSW	8.5	3.8		0	10		S	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.89	759.2	81.7	27.6	91	SE				6cs	1k			0.925	23.50	D. clouds	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Haparanda	29.65	753.0	29.69	754.0	53.6	12.0	76	N			4		8			0.08	2.		
Umea	29.64	752.9	29.69	754.2	54.7	12.6	68	NE			4		4			0	0		
Hernosand	29.63	752.7	29.69	754.0	55.4	13.0	85	N			4		10			0.004	0.1		
Stockholm	29.37	746.1	29.55	750.6	47.8	8.8	89	NNW			6		7			0.094	2.4		
Wisby	29.53	750.0	29.59	751.5	51.1	10.6	91	N			7		10			0.098	2.5	Raining	
Sub-Series.																			
Upsala	29.52	749.8	29.60	751.7	47.8	8.8	99	N	19.5	8.7			10		N	0.516	13.10	Raining	Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	26.43	722.2	29.79	756.7	78.3	25.7	51	SSW			1		9			0.087	2.2	Covered	The Observatory.
Zurich	28.30	718.7	29.90	759.4	64.8	18.2	87	W			1		10			0.433	11.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —5.1 mm; Thermometer, +6.4 cent.; Relative Humidity, —10 per cent.

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

TURKISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			30.03	762.7	77.2	25.1	56	NE	3	1.5			5		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.15	765.8	83.1	28.4		S			1		0						B. Stéfanidès.
Valona			30.18	766.5	87.3	30.7		SW			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			29.92	760.0	80.6	27.0		E			2		0						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.75	755.6	29.86	758.4	87.1	30.6	63	NW			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	30.14	765.5	30.21	767.3	56.9	13.8	68	Calm	0	0			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.23	767.8	50	10.0		NE	1	0.4			10s		NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.			30.21	767.3	50	10.0	92	Calm	0	0		8c	0	NW		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.22	767.6	57	13.9	94	Calm	0	0		5cs	0	Calm		0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	30.00	762.0	30.19	766.8	50.0	10.0	87	NE			1		10s			0	0	Dull	James Smith, M. A.
Dalhousie, N. B.	30.21	767.3	30.25	768.3	51.5	10.8	76	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	29.74	755.4	29.79	756.7	53.2	11.8	100	Calm				0	0			0.35	8.9	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.27	768.8	49	9.4	82	SW	6	2.7		0	Haze		Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.19	766.8	30.25	768.3	50.0	10.0	81	E	2	0.9		5cs	0			0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba			29.90	759.4	46	7.8	98	W	7	3.1		5cs	5ks	W	W	0.085	2.16	Fair	James Stewart.
Goderich, Ontario	29.43	747.5	30.21	767.3	60.1	15.6	76	NE			1	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	29.10	739.1	30.20	767.1	55	12.8	93	Calm			0	0	0			0	0	Clear	James Grant.
*Halifax, N. S.	30.04	763.0	30.18	766.6	54	12.2	80	NE	4	1.8			10n		NE	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.86	758.4	30.23	767.8	58.5	14.7	75	NE			3	4c	0			0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	30.11	764.8	30.13	765.3	56	13.3	75	NW			3	4cs	3s			0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.26	768.6	55	12.8	88	NE	5	2.2		8cs	0	Calm		0	0	Cloudy	S. Woods, M. A
*Montreal, Quebec	30.02	762.5	30.22	767.6	55	12.8	85	NE	4	1.8		5ck	2cs			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.56	750.8	30.26	768.6	50	10.0	96	NE	4	1.8		0	0			0	0	Clear	Rev. R. Mosley
Peterboro, Ontario	29.48	748.8	30.23	767.8	55.7	13.2	68	Calm			0	0	0			0	0	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.50	749.3	30.19	766.8	56	13.3	94	NE	4	1.8		10ck	0	NE		0	0	Fair	H. Morgan.
Port Hastings, N. S.	30.17	766.3	30.22	767.6	65.2	18.4		Calm	0	0						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.53	750.0	30.18	766.6	55	12.8	93	NE	5	2.2		0	0			0	0	Clear	M. Payne.
*Quebec, Quebec	29.94	760.5	30.27	768.8	52	11.1	86	N	9	4.0		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.82	757.4	30.29	769.4	43	6.1	98	Calm	0	0			10n		NW	0	0	Foggy	W. H. McIntyre.
St. John, N. B.	30.08	764.0	30.24	768.1	51	10.6	93	NE	1	0.4		7cs	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.50	749.3	30.19	766.8	59	15.0	85	Calm	0	0		0	0			0.03	0.8	Clear	K. Stewart.
Stayner, Ontario			30.22	767.6	56	13.3	90	Calm	0	0		2k	0	N		0	0	Fair	R. J. Cole.
Stratford, Ontario	28.92	734.6	30.20	767.1	54.2	12.3	92	E	5	2.2		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B.	30.18	766.6	30.21	767.3	59	15.0	73	W	1	0.4		5c	0	NW		0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.85	758.2	30.23	767.8	54	12.2	81	N	8	3.6		5ck	0	W		0.03	0.8	Fair	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					58.0	14.4	97	W				5k	5s			0	0	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.94	760.5	30.17	766.3	53	11.7	73	Calm	0	0		8c	0	Calm		0.03	0.8	Fair	
Alpena, Michigan	29.56	750.8	30.22	767.6	51	10.6	78	NW	4	1.8		5ck	0	SW		0	0	Fair	
Atlantic City, New Jersey	29.97	761.2	29.99	761.7	63	17.2	94	NE	37	16.5			10n		NE	0.62	15.7	Light rain	
Augusta, Georgia	29.84	757.9	30.02	762.5	73	22.8	63	N	5	2.2		5ck	0	W		0	0	Fair	
Baltimore, Maryland	30.02	762.5	30.07	763.8	58	14.4	87	N	9	4.0			10s		NE	1.90	48.3	Cloudy	
Barnegat, New Jersey	29.99	761.7	30.01	762.2	63	17.2	83	NE	33	14.8			10s		NE	0.45	11.4	Threatening	
Bismarck, Dakota	28.14	714.7	29.79	756.7	50	10.0	78	NW	8	3.6		5c	2s	SW	N	0.07	1.8	Fair	
Boise City, Idaho	27.20	690.9	29.77	756.1	53	11.7	42	S	4	1.8		5cs	0	Calm		0	0	Fair	
Boston, Massachusetts	29.99	761.7	30.14	765.5	56	13.3	74	NE	11	4.9		8cs	0	NE		Inap	Inap.	Cloudy	
Brackettville, Texas	28 82	732.0	29.80	756.9	74	23.3	96	Calm	0	0		10ks	0	SE		0.11	2.8	Cloudy	
Breckenridge, Minnesota	28.86	733.0	29.82	757.4	62	16.7	100	SE	9	4.0			10s		SW	1.06	26.9	Cloudy	
Brownsville, Texas	29.91	759.7	29.98	761.5	79	26.1	82	S	4	1.8		0	5ks		S	0	0	Fair	
Buffalo, New York	29.47	748.5	30.17	766.3	55	12.8	100	NE	3	1.3			10n		NE	0.04	1.0	Light rain	
Burlington, Vermont	29.94	760.5	30.20	767.1	59	15.0	82	E	2	0.9		8k	0	Calm		0	0	Fair	
Cairo, Illinois	29.77	756.1	30.16	766.1	64	17.8	78	N	5	2.2		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.68	677.7	30.18	766.6	62	16.7	56	Calm				0	0			0	0	Clear	
Campo, California	27.22	691.4	29.79	756.7	46	7.8	54	NE	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.88	758.9	29.89	759.2	67	19.4	84	NW	10	4.5		5k	5s	NW	NW	0.95	24.1	Cloudy	
Cape Henry, Virginia	29.90	759.4	29.92	760.0	65	18.3	94	NW	34	15.2			10n		W	0.07	1.8	Light rain	
Cape Lookout, N. Carolina	29.97	761.2	29.98	761.5	66	18.9	90	N	16	7.2			10ks		NW	1.93	49.0	Cloudy	
Cape May, New Jersey	29.94	760.5	29.97	761.2	59	15.0	94	N	28	12.5			10n			1.44	36.6	Light rain	
Charleston, South Carolina	29.94	760.5	30.00	762 0	76	24.4	86	NE	9	4.0		0	8ks;s		SW; NE	0.09	2.3	Fair	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	46	7.8	85	NW	4	1.8			10s		N	0.60	15.2	Cloudy	
Chicago, Illinois	29.46	748.3	30.15	765.8	60	15.6	82	E	2	0.9			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.45	748.0	30.08	764.0	59	15.0	87	NW	1	0.4			10s		Calm	0	0	Cloudy	
Cleveland, Ohio	29.45	748.0	30.17	766.3	59	15.0	81	Calm	0	0			10s		NE	0.15	3.8	Cloudy	
Concho, Texas	28.04	712.2	29.66	753.4	72	22.2	90	NE	6	2.7		8cs		NE		0	0	Cloudy	
Corsicana, Texas	29.54	750.3	29.99	761.7	71	21.7	100	E	4	1.8			Fog		Calm	0	0	Foggy	
Davenport, Iowa	29.53	750.0	30.16	766.1	57	13.9	69	SE	5	2.2		4ck	0	S		0	0	Fair	
Denison, Texas	29.23	742.4	30.01	762.2	68	20.0	100	E	4	1.8			Fog		Calm	0	0	Foggy	
Denver, Colorado	24.78	629.4	30.11	764.8	51	10.6	72	N	4	1.8			10s		NE	0	0	Cloudy	
Detroit, Michigan	29.49	749.0	30.16	766.1	57	13.9	87	N	5	2.2			10s		Calm	0	0	Cloudy	
Dodge City, Kansas	27.29	693.2	29.49	749.0	63	17.2	88	S	14	6.3		0	8s		S	0	0	Cloudy	
Dubuque, Iowa	29.42	747.3	30.12	765.0	57	13.9	75	SE	3	1.3		5c	0	SE		0	0	Fair	
Duluth, Minnesota	29.29	744.0	29.95	760.7	61	16.1	77	W	5	2.2			10s		W	0	0	Threatening	
Eagle Pass, Texas	29.15	740.4	29.86	758.4	73	22.8	95	SE	6	2.7		0	2s		Calm	0.29	7.4	Fair	
Eastport, Maine	30.12	765.0	30.18	766.6	54	12.2	73	N	6	2.7		5cs;hz	0	S		0	0	Fair	
Erie, Pennsylvania	29.42	747.3	30.13	765.3	61	16.1	82	NE	1	0.4		2c	2k	NE	NE	0.06	1.5	Fair	
Escanaba, Michigan	29.53	750.0	30.19	766.6	47	8.3	77	Calm	0	0		0	Fog			0	0	Light fog	
Florence, Arizona	28.17	715.5	29.77	756.1	84	28.9	46	Calm	0	0		0	0			0	0	Clear	
Fort Bayard, New Mexico	24.05	610.9	30.05	763.3	58	14.4	81	SW	4	1.8			10s		SW	0.28	7.1	Cloudy	
Fort Craig, New Mexico	25.52	648.2			58	14.4	93	NW	1	0.4		0	0			0.98	24.9	Clear	
Fort Gibson, Indian Ter	29.50	749.3	30.02	762.5	67	19.4	84	SE	5	2.2		2c	5s	W	S	0	0	Fair	
Fort Griffin, Texas	28.70	729.0	29 93	760.2	72	22.2	90	E	4	1.8			10s		Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.74	730.0	29.81	757.2	70	21.1	90	SE	8	3.6			10n		SE	0.02	0.5	Light rain	
Fort Sully, Dakota	28.17	715.5	29.78	756.4	59	15.0	100	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
Galveston, Texas	29.97	761.2	30.01	762.2	80	26.7	86	SE	2	0.9		2k	0	Calm		0	0	Fair	
Grand Haven, Michigan	29.55	750.6	30.21	767.3	51	10.6	93	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Indianapolis, Indiana	29.38	746.2	30.16	766.1	54	12.2	86	N	3	1.3		0	0			0	0	Clear	
Indianola, Texas	29.98	761 5	30.01	762.2	80	26.7	86	SE	7	3.1		0	5ks		S	0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	29.95	760.7	29.97	761.2	80	26.7	78	SW	3	1.3		5k	0	SW		0	0	Fair	
Keokuk, Iowa	29.47	748.5	30.08	764.0	62	16.7	77	SE	6	2.7		1c	Haze	Calm	Calm	0	0	Fair	
Key West, Florida	29.92	760.0	29.95	760.7	84.0	28.9	71	E	4	1.8		0	1ks		E	0.03	0.8	Hazy	
Kittyhawk, North Carolina	29.93	760.2	29.95	760.7	64	17.8	88	NW	18	8.0			10s		NW	0.59	15.0	Cloudy	
Knoxville, Tennessee	29.11	739.4	30.10	764.5	59	15.0	87	NE	2	0.9		0	Sm'e			Inap.	Inap.	Smoky	
La Crosse, Wisconsin	29.35	745 5	30.08	764.0	57	13.9	75	S	6	2.7		0	0			0	0	Clear	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	67	19.4	74	Calm	0	0			10s		SW	0.35	8.9	Cloudy	
Laredo, Texas					78	25.6	86	E	3	1.3		5c	0	Calm		0	0	Fair	
Leavenworth, Kansas	29.18	741.2	30.00	762.0	64	17.8	89	S	2	0.9		2c	5k	Calm	S	0	0	Cloudy	
Los Angeles, California	29.44	747.8	29.77	756.1	57	13.9	93	NE	3	1.3		0	Fog			0	0	Foggy	
Louisville, Kentucky	29.58	751.3	30.13	765.3	57	13.9	80	N	8	3.6		0	Sm'e		N	0	0	Clear	
Lynchburg, Virginia	29.38	746.2	30.04	763.0	68	20.0	69	NE	2	0.9		8k	0	W		0.02	0.5	Cloudy	
Maricopa Wells, Arizona					75	23.9	42	NE				0	0			0	0	Clear	
Marquette, Michigan	29.43	747.5	30.12	765.0	57	13.9	57	S	6	2.7		0	0			0	0	Clear	
Mason, Texas	28.41	721.6	30.10	764.5	75	23.9	81	Calm	0	0		5c	2s	SE		0	0	Fair	
Memphis, Tennessee	29.81	757.2	30.12	765.0	65	18.3	90	NE	2	0.9		0	Fog		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.52	749.8	30.21	767.3	56	13.3	80	N	2	0.9		2ck	Sm'e	Calm	Calm	0	0	Fair	
Mobile, Alabama	30.02	762.5	30.06	763.5	73.5	23.1	95	N	4	1.8			10s		N	1.44	36.6	Cloudy	
Montgomery, Alabama	29.84	757.9	30.07	763.8	68.5	20.3	84	N	3	1.3		0	0			0	0	Clear	
Morgantown, West Virginia	29.05	737.9	30.08	764.0	60	15.6	88	N	5	2.2			10s		W	0.02	0.5	Cloudy	
Mt. Washington, N. H.	23.97	608.8	30.33	770.4	39	3.9	46	E	18	8.0		5c	Haze	NW	Calm	0	0	Fair	
Nashville, Tennessee	29.59	751.6	30.12	765.0	62	16.7	83	N	1	0.4		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	29.97	761.2	30.09	764.3	56	13.3	60	N	14	6.3		8ck	0	NW		0.22	5.6	Cloudy	
New London, Connecticut	30.05	763.3	30.10	764.5	61	16.1	71	NE	10	4.5		2ck	2s	W	E	0.36	9.1	Fair	
New Orleans, Louisiana	29.99	761.7	30.04	763.0	78.5	25.8	84	NE	8	3.6		5k	0	W; SE		0.06	1.5	Fair	
Newport, Rhode Island	30.03	762.7	30.08	764.0	60	15.6	76	NE	9	4.0		0	8ks		SW	0.23	5.8	Cloudy	
New York, New York	29.92	760.0	30.10	764.5	58	14.4	64	N	16	7.2			10s		Calm	0.15	3.8	Cloudy	
Norfolk, Virginia	29.91	759.7	29.97	761.2	62	16.7	88	NW	18	8.0			10s		NW	0.03	0.8	Cloudy	
North Platte, Nebraska	26.93	684.0	29.40	746.7	59	15.0	87	NW	12	5.4			10s		Calm	0.05	1.3	Cloudy	
Olympia, Washington Ter.	29.79	756.7	29.83	757.7	54	12.2	86	S	2	0.9			10s		Calm	0.02	0.5	Cloudy	
Omaha, Nebraska	28.84	732.5	29.88	758.9	65	18.3	83	S	10	4.5		2c	5s	SW	Calm	0	0	Fair	
Oswego, New York	29.88	758.9	30.20	767.1	60	15.6	70	Calm	0	0			10n		Calm	0.01	0.3	Light rain	
Pembina, Dakota	29.09	738.9	29.91	759.7	48	8.9	92	Calm	0	0		5cs	5s	Calm	Calm	0.21	5.3	Cloudy	
Philadelphia, Pennsylvania	30.02	762.5	30.07	763.8	55	12.8	93	NE	23	10.3			10n		NE	0.98	24.9	Light rain	
Phœnix, Arizona					72	22.2	37	SW				0	0			0	0	Clear	
Pike's Peak, Colorado	17.79	451.8	30.00	762.0	21	−6.1	100	SW	17	7.6			10n		Calm	0.05	1.3	Light snow	
Pioche, Nevada	24.13	612.9	29.90	759.4	47	8.3	21	NW	4	1.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.30	744.2	30.10	764.5	59	15.0	87	E	4	1.8			10s		E	0.05	1.3	Cloudy	
Port Huron, Michigan	29.51	749.5	30.17	766.3	59	15.0	76	NE	5	2.2		0	0			Inap.	Inap.	Clear	
Portland, Maine	30.14	765.5	30.19	766.8	57	13.9	69	NE	12	5.4		8k	Haze	Calm		0	0	Cloudy	
Portland, Oregon	29.85	758.2	29.94	760.5	57	13.9	87	S	4	1.8			10s		Calm	0	0	Cloudy	
Prescott, Arizona					55	12.8	62	Calm				0	0			0.12	3.0	Clear	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	80	26.7	74	NE	6	2.7		0	5ks		Calm	0	0	Fair	
Red Bluff, California	29.41	747.0	29.76	755.9	66	18.9	36	NW	3	1.3		0	0			0	0	Clear	
Rochester, New York	29.56	750.8	30.17	766.3	57	13.9	87	Calm	0	0			10s; fg		SE; Calm	0.01	0.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.42	747.3	29.98	761.5	49	9.4	85	W	1	0.4		0	8s		Calm	0	0	Cloudy	
Sacramento, California	29.70	754.4	29.78	756.4	63	17.2	51	S	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.57	751.1	30.14	765.5	62	16.7	77	SE	4	1.8		0	0			0	0	Clear	
St. Marks, Florida	29.99	761.7	30.01	762.2	76	24.4	81	N	4	1.8		0	0			0	0	Clear	
St. Paul, Minnesota	29.14	740.1	29.94	760.5	63	17.2	72	SE	4	1.8		5c	2s	Calm	SW	0	0	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.76	654.3	30.09	764.3	46	7.8	54	S	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.28	743.7	29.84	757.9	78	25.6	91	SE	4	1.8			Haze		S	Inap.	Inap.	Hazy	
San Diego, California	29.73	755.1	29.79	756.7	63	17.2	94	N	4	1.8			Fog			0	0	Foggy	
Sandusky, Ohio	29.48	748.8	30.14	765.5	64	17.8	89	SE	2	0.9		0	8ks		NE	Inap	Inap.	Fair	
Sandy Hook, New Jersey	30.05	763.3	30.07	763.8	59	15 0	76	NE	24	10.7			10ks		NE	0.40	10.2	Cloudy	
San Francisco, California	29.75	755.6	29.81	757.2	54	12.2	93	SW	4	1.8		0	0			0	0	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	48.5	9.2	77	E	6	2.7		Haze	1s		Calm	0	0	Fair	
Savannah, Georgia	29.90	759.4	29.99	761.7	75	23.9	85	N	9	4.0		0	5s		W	0.31	7.9	Fair	
Shreveport, Louisiana	29.84	757.9	30.05	763.3	71	21.7	95	E	3	1.3			10s		Calm	0	0	Cloudy	
Smithville, North Carolina	29.99	761.7	30.02	762.5	68	20.0	79	N	11	4.9		0	0			0.24	6.1	Clear	
Springfield, Massachusetts	29.95	760.7	30.08	764.0	56	13.3	56	N	7	3.1		10ck	0	NE		0.02	0.5	Cloudy	
Stanwix, Arizona					72	22.2	45	SW				0	0			0	0	Clear	
Stockton, Texas					66	18.9	94	Calm	0	0		0	8s		Calm	0.01	0.3	Fair	
Thatcher's Island, Mass.	30.09	764.3	30.14	765.5	57	13.9	87	NE	24	10.7		5s	5s	NE	NE	0	0	Cloudy	
Toledo, Ohio	29.48	748.8	30.15	765.8	58	14.4	93	NW	5	2.2			10s		NW	0	0	Cloudy	
Tucson, Arizona	27.36	694.9	29.91	759.7	72	22.2	52	S				0	0			0	0	Clear	
Tybee Island, Georgia	29.94	760.5	29.97	761.2	77	25.0	86	N	8	3.6		5ck	2s	W	Calm	0.12	3.0	Fair	
Umatilla, Oregon	29.53	750.0			50	10.0	71	Calm	0	0			10s		Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.84	757.9	30.09	764.3	69	20.6	90	E	11	4.9			10s		E	0	0	Cloudy	
Virginia City, Montana	24 37	619.0	29.85	758.2	35	1.7	69	Calm	0	0		0	0			0.30	7.6	Clear	
Visalia, California	29.43	747.5	29.79	756.7	63	17.2	46	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	29.96	761.0	30.07	763.8	58	14.4	90	N	12	5.4			10s		NE	0.93	23.6	Cloudy	
Wickenburg, Arizona					73	23.8	36	NE				0	0			0	0	Clear	
Wilmington, N. Carolina	29.94	760.5	30.01	762.2	66	18 9	90	N	10	4.5		0	0			0.04	1.0	Clear	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	40	4.4	32	E	12	5.4		0	0			0	0	Clear	
Wood's Holl, Mass.	30.01	762.2	30.06	763.5	59	15.0	87	NE	8	3.6			10s		NE	0.12	3.0	Cloudy	
Yankton, Dakota	28.58	725.9	29.81	757.2	65	18.3	78	S	6	2.7			10s		S	0	0	Cloudy	
Yuma, Arizona	29.54	750 3	29.69	754.1	74	23.3	19	SE	1	0.4		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.34	745.2	29.39	746.5	58.5	14.7	97	SW	5	2.2		2ck	3s	SW	SW	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.93	760.2	29.95	760.7	83	28.3	75	NE	2.4	1.1		2ck	0	SE		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	78	25.6	86	Calm	0	0		8c	5n	Calm	NE	1.00	25.4		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.85	758.2	29.93	760.2	83	28.3		E			5					0	0	Clear	F. M Everett.
St. Thomas, W. I.					83	28.3		E				2c	2ks	E	E	0	0	Clearing	G. O. Gellich
Pt-a-Pitre, G'd'loupe, W. I.	29.86	758.4	29.88	758.9	81	27.2	91	NE				0	10k		NE			Foggy	L. V. Bigard.
Bridgetown, Barbados, W. I	30.03	762.7	30.05	763.3	84	28.9	75	SE	4	1.8		10ck	10ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.00	762.0	84	28.9	75	E			3	0	4k			0.010	0.25	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			65.5	18 6	86	Calm			0		10n; s			0.74	18.8	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.09	764.3	30.11	764.8	73.5	23.1		NE			6					0.04	1.0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672 [illegible] m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027 9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5,22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.82	757.4	58	14.4	57	13.9	94	SW	16	7.2			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.19	766.8			77	25.0	86	N	7	3.1			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.19	766.8	62	16.7	56	13.3	63	NE	6	2.7			10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	30.08	764.0	71.5	21.9	69.5	20.8	75	E			4		4k;8		SE	0	0			Clearing	
Adams, Rio de Janeiro, Brazil	30.22	767.6	71	21.7	69	20.6	95	NNW			0–1		10		NE	0	0			Hazy	
Alert, Yokohama, Japan	30.22†	767.6†	73	22.8	73	22.8	95	ESE			2		8		ESE			Smooth		D. clouds	
Alliance, Smyrna, Turkey	30.10	764.5	84	28.9	84	28.9	54	NW			3–4		0							Hazy	
Ashuelot, Che-foo, China	29.87	758.7	74	23.3	72	22.2	85	NE			0–1		2							D. clouds	
Canonicus, New Orleans, La.	30.08	764.0	56	13.3	78	25.6	91	NE			2		2							Fair	
Colorado, New York, N. Y.	30.14	765.5	58	14.4	59	15.0	82	NNE	20	8.9			9		NNE	0.23	5.8			Cloudy	
Despatch, Constantinople, Turkey	30.15	765.8	78	25.6	75	23.9	68	NE			2		7		NE			Smooth		Cloudy	
Essex, N. 38° 30′, W. 33° 57′	30.10	764.5	74	23.3	76	24.4	76	W			6		9					Moderate.	S&W	D. clouds	
Franklin, Norfolk, Va.	30.04	763.0	63	17.2	64	17.8	94	NNW	15.6	7.0			4		NNW	0.125	3.18			Misty	
Frolic, S. 20° 52′, W. 39° 29′	30.41	772.4	76	24.4	78	25.6	82	NNE			4		5k		N&E	Light	Light	Moderate.	N&E	D. clouds	
Gettysburg, Naples Bay, Italy	29.93‡	760.2‡			83	28.3	87	SW			1		7		Calm	0	0	Light	SSW	D. clouds	
Kearsarge, N. 23° 36′, E. 117° 35′	30.07	763.8			81	27.2	96	SW			3–4		3			0	0	Smooth		D. clouds	
Lackawana, Neeah Bay, W. T.	29.86	758.4			58	14.4	70	Calm			0		5					Smooth		Showery	
Marion, Constantinople, Turkey	30.06	763.5	74	23.3	76	24.4	68	ENE			3		6		ENE	0	0	Smooth		D. clouds	
Michigan, Erie, Pa.	29.62	752.3	63	17.2	63	17.2	78	NE			1		5		NE					Fair	
Monocacy, Yokohama, Japan	30.09	764.3	72	22.2	73	22.8	90	ESE			3		5		E	0	0			D. clouds	
New Hampshire, Port Royal, S. C.	30.16	766.1			77	25.0	86	WNW	11	4.9			6		SW	0.40	10.2			D. clouds	
Omaha, S. 26° 20′, W. 71° 10′	30.13	765.3	62	16.7	61	16.1	71	S	1	0.4			10		Calm	0	0	Moderate.	S	Cloudy	
Onward, Callao, Peru	30.08†	764.0†	68	20.0	65	18.3	78	SE			2		10					Long	W	D. clouds	
Ossipee, Norfolk, Va.	30.16	766.1	66	18.9	64	17.8	89	NNW			2–4		10		NNW					Squally	
Palos, Shanghai, China	30.01	762.2	77	25.0	75	23.9	86	W			1		5		W	Blank	Blank			Misty	
Plymouth, New York, N. Y.	30.37	771.4	63	17.2	59	15.0	88	NNE			3		10		NNE					Rainy	
Ranger, Nagasaki, Japan	29.98	761.5			80	26.7	87	Calm			0		4		Calm					Cloudy	
Richmond, Boston, Mass.	30.22	767.6	60.0	15.6	56.0	13.3	81	NW			2		7		NW	0	0			D. clouds	
Rio Bravo, Brownsville, Texas	29.88	758.9			79	26.1	95	SE			1		3		Calm					D. clouds	
Santee, Annapolis, Md.	30.12	765.0	64	17.8	59	15.0	94	N			4		10		N	1.63	41.4			Overcast	
St. Louis, League Island, Pa	30.00	762.0	57	13.9	56	13.3	94	N	11	4.9			10		NNE	2.38	60.5			Raining	
Tennessee, Yokohama, Japan	30.18	766.6	73	22.8	72	22.2	71	E	12	5.4			3			0	0	Moderate	E	D. clouds	
Trenton, Marseilles, France	29.96†	761.0†	82	27.8	80	26.7	82	SW	9	4.0			4		S&W	0	0			D. clouds	
Vandalia, N. 35° 14′, E. 29° 32′	30.01	762.2	84	28.9	83	28.3	75	WNW			4		0					Long	NW	Blue sky	
Wabash, Boston, Mass.	30.17	766.3	57	13.9	57	13.9	75	NNE	7	3.1			7		NNE	0	0			D. clouds	
Wyoming, Washington, D. C.	30.32†	770.1†	66	18.9	66	18.9		N			1		10		N					D. clouds	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio Hong Kong, China.					83	28.3		SSW			3		5		SSW			Cloudy	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

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

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 35° 42′, E. 149° 46′			30.22†	767.6†	71	21.7		S			5		n;s		SE	Long	W	Overcast	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 42° 55′, W. 48° 49′	WNW		30.14	765.5	66.5	19.2	68	N			3		ks		NNW	Smooth		D. clouds	Capt. A. Jaeger.
S. S. Ohio Bremerhafen.			30.02	762.5	60.0	15.6	52	ENE			2		c;k		ENE			Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 40° 35′, W. 67° 41′			*29.78	756.4*	63	17.2		NE			7		10		NE	Moderate.	E	Heavy rain.	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 37° 55′, W. 74° 20′	SSW	2	29.81	757.2	69	20.6	100	W	6	2.7			10n		NW	Swell	NE	Threatening	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 9, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

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

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.15	765.9	79.7	26.5	63	NNW			1		1			0	0	Clear	Michel.
Algiers			30.13	765.2	82.4	28.0	53	NNW			1		7			0.071	1.8	Cloudy	Peter.
La Calle			30.09	764.3	81.7	27.6	74	NW			3		9			0.039	1.0	Hidden	Fleury.
Tunis			30.09	764.3	104.0	40.0		SE			5		6			0	0	Fair	Jacques.
Sfax			30.10	764.6	89.6	32.0		SE			3		2			0	0	Clear	Husson.
Saida			30.10	764.5	84.0	28.9		NNW			3		2			0	0	Clear	Millot.
Tebessa			30.11	764.7	86.0	30.0		S			2		2			0	0	Clear	Bourgeois.
Geriville			30.06	763.5	79.2	26.2	41	N			2		3			0	0	Fair	Lemaillot.
Laghouat			30.07	763.6	89.6	32.0	38	W			4		3			0	0	Fair	François.
Biskra			30.06	763.5	101.1	38.4	29	NW			4		5			0	0	Fair	Kuntz.

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

AUSTRIAN SERIES.

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

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.52	749.9	30.07	763.7	62.6	17.0	71	SE			2		10			0.575	14.6	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.33	745.0	30.10	764.4	57.9	14.4	65	W			2		2			0	0		Dr. Wierzbiski.
Eperies	29.18	741.2	30.05	763.2	61.9	16.6	46	Calm			0		3cs			0.041	1.05		Julius Mikolik.
Gratz	28.81	731.7	30.04	763.1	59.0	15.0	79	SSW			2		10			0.059	1.5		Andreas Rospini.
Hermannstadt	28.60	726.5	29.98	761.5	67.3	19.6	54	N			1		3			0.012	0.30		Prof. Reissenberger.
Kremsmünster	28.56	725.4	29.88	758.9	59.0	15.0	68	E			6		7			0.228	5.8		Prof. C. Wagner.
Lemberg	29.01	736.9	29.98	761.6	58.6	14.8	57	SW			2		4			0	0		Dr. T. Stanecki.
Pola	29.84	757.9	29.95	760.7	73.9	23.3	84	ESE			1		9cks			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin																			
Trieste	29.77	756.1	30.04	763.1	63.0	17.2	68						10			0.571	14.50		Karl Stancel.
Vienna	29.86	758.4	29.96	761.0	76.3	24.6	77	W			1		8			4.209	106.9		P. Busin.
	29.33	744.9	30.02	762.4	61.0	16.1	57	SE			1		8			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.43	722.2	29.95	760.6	49.8	9.9	97	N			2		10			0.543	13.8	Rain and fog	Royal Observatory.
Brussels	29.75	755.6	29.95	760.7	58.1	14.5	64	E			4		10		ESE	0.024	0.60		
Furnes	29.93	760.3	29.96	760.9	56.8	13.8	75	ENE			4		10			0.008	0.2		
Maeseyck	29.83	757.6	29.96	760.9	61.0	16.1	65	E			4		10			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	30.10	764.5	30.20	767.1	52.1	11.2		ESE	10	4.5		9				0	0	Overcast	C. H. Thompson; W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			30.06	763.5	57.2	14.0		SE	14	6.3									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.05	763.3	59.0	15.0		E	21	9.4		8						Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.98	761.5	60.4	15.8		SSE			1	10						D. clouds	J. Dreyer.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.05	763.3	61.0	16.1		E			1	7						D. clouds	H. Todd. [H.C
Cardington			30.04	763.0	63.0	17.2		E			2	7						Blue sky	John McLaren.
Chatham, School M. E.	29.86	758.4	29.98	761.5	60.2	15.7		E			5	9						Overcast	F. Magawran, Q. M. Sergt. R.E
Dartmoor	28.52	724.4	30.00	762.0	51.2	10.7		E			4	10						Rain & fog	Alexander Watt.
Davos Platz, (Switzerlar d)																			Francis Redford, M. A.
Donaghadee	30.04	763.0	30.07	763.8	60	15.6		ESE			5	0						Blue sky	J. Mac Gowan.
Dover	29.94	760.5	29.97	761.2	61	16.1		E			5	5						½ clouded	J. Costello.
Eccles, (near Manchester)			30.06	763.5	58.7	14.8		E	0.4	0.2		7						D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.72	754.9	29.94	760.5	56.1	13.4		E			4	10						Overcast	The Staff.
Fort Napier, (Natal)	27.57	700.3	29.75	755.6	93.7	34.3		N			3	9						D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.00	762.0	77.0	25.0		N			1	5						Raining	
Galway, Queen's College			29.88	758.9	61.5	16.4		SSE			1	10						Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.13	765.3	30.17	766.3	77.3	25.2		NW			3	1						D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.93	760.2	30.13	765.3	55.7	13.2		ENE			3	7						Gloomy	D. G. Maclean.
Great Yarmouth	30.05	763.3	30.05	763.3	58	14.4		E			5	3						Blue sky	G. T. Watson.
Greenwich, Royal Obs'y.	29.82	757.4	29.95	761.7	61.6	16.4		E			5	7						D. clouds	The Staff, for G. B. Airy.
Guernsey	29.70	754.4	29.92	760.0	61.5	16.4		ESE			1	8						D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.97	761.2	58	14.4		E			2	10n				1.15	29.2	Raining	M. P. Moyle.
Holyhead	29.98	761.5	30.03	762.7	58	14.4		E			4	3						D. clouds	John Tilston.
Jersey	29.66	753.4	29.94	760.5	64.8	18.2		SE			1	8				Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory			30.00	762.0	61.4	16.3		E	27	12.1		7						Hazy	The Staff.
Kingstown	30.02	762.5	30.05	763.3	57	13.9		ESE			4	5						D. clouds	George Mitchell
Leicester, Museum			30.05	763.3	60.4	15.8		NE			3	8						D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.97	761.2	30.04	763.0	85.0	29.4		NE			1	2						D. clouds	Corpl. P. Beavis, A.H.C.
Nairn																			W. D. Penny.
Nassau, (Bahamas)			29.99	761.7	86.5	30.3		E			1	4				Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.90	759.4	30.09	764.3	62.5	16.9		NE			2	8k			NE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.51	749.5	30.03	762.7	62.0	16.7		ENE			4	8						D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y.			30.00	762.0	62	16.7		E			2	4						D. clouds	F. Lucas
Plymouth	29.87	758.7	29.94	760.5	57.5	14.2		E			4	10						Overcast	John Merrifield.
Roche's Point	29.87	758.7	29.91	759.7															W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			30.21	767.3	53	11.7		SE	12	5.4		5						D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey								SW			1								Sergt. W. H. Lyne.
Sheffield	29.85	758.2	30.09	764.3	62.1	16.7		E			2	7				0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.07	763.8	30.10	764.5	60.0	15.6	59	E			3	5				0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					57.2	14.0		E			2	8						D. clouds	W.C.Carlisle, for Rev. S.J.Perry
Stornoway, Lewis C., (Hebr.)			30.07	763.8	53	11.7		Calm			0	2						Blue sky	John Smith.
Stratfield Turgiss	29.77	756.1	29.99	761.7	63.4	17.4		E			2	9						Squally	Rev. C. H. Griffith, F.M.S.
Thurso			30.16	766.1	56	13.3		SSE			2	6						D. clouds	John Trotter.
Truro, Royal Institution			29.92	760.0	58	14.4		E			4	10						Gloomy	W. Newcombe.
Valencia, Observatory			29.84	757.9	58.1	14.5		ESE	30	13.4		10						Hazy	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		E			4	5				0	0		Hopar Mason.
Cape Good Hope, Obs'y	29.84	757.9	29.88	758.9	56.8	13.8	99	W	19	8.5		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.61	777.5	46.0	7.8	81	S			1	10n				0.04	1.0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.16	766.1	54.1	12.3		E			2	10ks				0	0	Overcast	Andrew Gibb.
Mauritius, Observatory	29.97	761.2	30.16	766.1	73.9	23.3	62	ESE	15.6	7.0		0	2		E	0.02	0.5	Fine	C. Meldrum.
Melbourne, Observatory	30.31	769.9	30.40	772.1	51.2	10.7	91	S	10	4.5		10				0.21	5.3	Drizzling	R. L. J. Ellery.
Monach L'i-house, (Hebrides)			30.11	764.8	57	13.9		SSE			4	0	0			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.21	767.3	52	11.1		W			3	10							Robert Burnet.

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

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea or swell. Height scale 0—9	Direction from—	Weather.	Observer.
S. S. Algeria, N. 41° 55′, W. 51° 40′			30.17	766.3	63	17.2		ESE			3		10	SW				*2.5	NE	Overcast	Capt. W. Watson.
S. S. Batavia, N. 42° 20′, W. 67° 10′			29.70	754.4	56	13.3		NNE			7		10					7	E	Raining	Capt. J. E. Monland.
Ship Camperdown																					Capt. A. T. Miller.
Brig Catherine, N. 42° 0′, W. 61° 45′			29.78	756.4	65	18.3		ENE			6		10					7		Overcast	Capt. Adam Smith.
Barque Celeste																					Capt. D. F. McKechnie.
S. S. Hibernia																					Capt. W. R. Cato
Barque Maroon																					Capt. A. T. Brown.
Ship Mikado																					Capt. C. C. Frehn.
S. S. Seine, N. 49° 7′, W. 50° 4′			30.12	765.0	55	12.8		WNW			3		0			0					Capt. H. Manning.
Barque Sorata																					Capt. Jas. J. Price.
Schooner Traveller																					Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.26	667.0			66.2	19.0	98	NE			1		8cs			0.6	15.		Federico Maison.

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

DANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	30.03	762.7	30.08	763.9	58.1	14.5	63	NW			2		0						
Fanöe	30.06	763.4	30.08	763.9	59.0	15.0	73	W			4		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.81	757.1	29.85	758.2	52.7	11.5	91	Calm			0		8						
Thorshavn, (Faröe)	30.14	765.5	30.17	766.4	52.3	11.3	71	SW			2								
Vestervig	29.89	759.2	30.06	763.5	61.5	16.4	75	NW			2		0						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.39	746.5	29.94	760.5	61.7	16.5	73	NE			1		10		W	0.12	8.	Covered	Collignon, Director.
Amiens, Normal School																			Bouvarne, Director.
Avignon, Normal School	29.83	757.6	29.91	759.6	66.9	19.4	75	SSE			3		10		S	0.291	7.4	Thunder-storm	Mr. Giraud, Director.
Bar-sur-Seine	29.35	745.0	29.91	759.6	65.3	18.5	82	NE			1		8		SW	0.457	11.6	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.67	753.7	29.95	760.8	56.7	13.7	86	NNE			1		10			0.285	7.25	Covered	Normal School.
Besançon	29.08	738.5	29.95	760.8	66.6	19.2	81	SW			2		2		SW	0.776	19.7	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.08	738.6	30.01	762.2	73.8	23.2	59	S			2		5ic		W	1.34	34.	Cloudy	Normal School.
Bourges, Normal School	29.38	746.3	29.92	759.9	68.4	20.2	72	SW			1		8		SW	0	0	Very cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.62	752.3	29.84	757.9	74.3	23.5	66	Calm			0		1			0	0		The Staff.
Carcassonne, Normal School	29.56	750.9	29.97	761.1	75.9	24.4	65	SE			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoullé, Director.
Châlons-sur-Marne, N. Sch'l	29.61	752.2	29.93	760.3	55.8	13.2	90	NE			1		10n		NE	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.61	726.6	29.93	760.1	66.0	18.9	64	W			2		10		SW	0.059	1.5	Covered	Allnard, Director.
Commercy, Normal School	29.08	738.6	29.96	760.9	56.5	13.6	21	E			2		10		E	1.079	27.4	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.87	733.2	30.01	762.2	77.2	25.1	27	SE			4		2		SE	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.65	753.0	29.85	758.2	65.5	18.6	72	NW			6		5		NW	0.130	3.3	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.61	752.0	29.91	759.6	66.7	19.3	81	E			2		8		S	0.404	10.25	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.06	738.2	29.95	760.8	70.5	21.4	67	S			1		2		SW	0.413	10.5	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	29.83	757.6	29.93	760.1	64.0	17.8	72	S			3		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.16	740.7	29.83	757.7	67.5	19.7	91	S			4		5		W	0.756	19.2	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.82	732.0	29.84	757.9	62.2	16.8	81	W			2		10		W	1.071	27.2	Covered	Normal School.
Nismes, Normal School	29.82	757.3	30.01	762.2	86.7	30.4	49	S			2		0			0.071	1.8	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.70	754.4	29.94	760.4	58.3	14.6	87	NW			1		10			0.132	3.36	Foggy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.78	756.4	29.81	757.2	59.7	15.4	96	ESE			6		10		ESE	0.31	8.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.86	758.5	29.95	760.7	59.7	15.4	81	ENE			1		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	28.97	735.8	30.02	762.5	68.4	20.2	72	W			4		8		E	0	0	Very cloudy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.85	758.1	29.87	758.8	80.6	27										0	0		L'Abbé Marchésl.
Marseilles, Observatory			29.92	760.0	79.2	26.2	55	S			1		2			0	0		The Staff.
Mont-Louis	24.89	632.2	30.21	767.2	50.0	15.0	41	SW	9.3	4.17			5		NW	0.217	5.5		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.65	753.2	29.93	760.2	58.8	14.9	83	NE			1		10			Inap.	Inap.		Marié Davy, Director.
Perpignan			29.93	760.1	74.8	23.8	67	SE	9.3	4.17			7		NW	0.024	0.6		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.33	541.8			33.4	0.8		SW			2		10					Raining	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.56	573.0			40.1	4.5		SW			1		10			0.185	4.7	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.77	756.2	29.94	760.4	59.0	15.0	86	NW			1		10			0.012	0.3		E. Renou.
Toulouse, Observatory	29.32	744.6	30.04	763.0	69.1	20.6	50	NW			4		9			0	0		The Staff.
Tours													4			0.906	23.0		C. Marquet.
Versailles, (near Paris)			29.95	760.6	59.7	15.4	87	E			1		10			0.004	0.09	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.89	759.3	29.92	760.0	68.4	20.2	95	Calm	0	0			6k			0	0	Cloudy	Marc Dechevreus, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,438.1 ft.; Pic du Midi (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10	Clouds. Amount. Up'er 0–10	Low'r 0–10	Direction. Upper From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Berlin	29.94	760.5	30.11	764.8	61.5	16.4	52	S			1		0			0	0		Prof. Arndt.
Breslau	29.61	752.0	30.14	765.5	57.9	14.4	46	WNW			2		1			0	0		Royal University Obs'y.
Carlsruhe	29.50	749.2	29.92	759.9	61.0	16.1	87	NE			1		10			1.346	34.2		Albert Senz.
Cassel	29.47	748.5	30.08	764.0	64.0	17.8	47	E			2		2			0	0	Rain; fog	Dr. H. Möhl.
Crefeld	29.80	756.8	29.96	760.9	63.1	17.3	52	E			5		8	E		0	0		Director Lose.
Emden	30.04	763.1	30.08	764.0	60.4	15.8	52	NE			3		0			0	0		Prof. Prestel.
Frankfort on the Main	29.68	753.8	30.04	763.0	55.0	12.8	76	E			2		10			0.047	1.2		Physical Society.
Friedrichshafen	28.56	725.3	29.97	761.2	60.1	15.6	93	N			5		10			0.461	11.7	Raining	M. Wilhelm.
Hamburg	30.04	763.0	30.11	764.8	58.5	14.7	62	SSW			3		0	SW		0	0	Raining	Captain F. Hegemann.
Kiel	30.08	764.0	30.10	764.4	57.7	14.3	72	NW			2		3			0	0	Clear.	Prof. G. Karsten.
Königsberg, (Prussia)	29.89	759.2	29.96	761.0	55.8	13.2	65	NW			2								Prof. E. Luther.
Köslin			30.11	764.7	58.1	14.5		NW			2		0			0	0		H. Müller.
Leipsic, Observatory	29.69	754.2	30.11	764.8	60.1	15.6	66	E			4		6			0	0		Prof. Bruhns.
Memel, Naval School	29.85	758.1	29.89	759.3	57.2	14.0	65	NW			6–7		6s	SSW					Reinbrecht von Skalweit.
Neufahrwasser	30.01	762.3	30.03	762.7	60.4	15.8	47	NNW			4		2			0	0	Squally	A. Lothes.
Posen	29.85	758.2	30.14	765.5	60.1	15.6	51	NW			2		2			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.40	746.7	29.93	760.3	63.5	17.5	84	Calm			0		10			0.049	1.25		Dr. Schur.
Stuttgart	28.99	736.4	29.93	760.1	63.3	17.4	81	NE			1		10			0.177	4.5		Prof. Schoder.
Treves, (Trier)														E				Raining	Prof. Flesch.
Weissenburg, (Bavaria)	28.48	723.4	29.98	761.4	57.4	14.1	70	Calm			0		0			0.189	4.8		Dr. Von Bebber.
Wustrow, Naval School	30.16	766.1	30.20	767.1	55.6	13.1	67	NNW			3		0			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

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

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

INDIAN SERIES.

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

Kurrachee	29 64	752.9	29.69	754.2	84.3	29.1	73	WSW	31.0?	13.8?			8		WSW	0	0	D. clouds	
Deesa																			
Bombay	29.78	756.4	29.82	757.4	83.5	28.6	83	W	12.0	5.4			10		WSW	0.04	1.0	Misty	
Poona	27.76	705.1	29.75	755.7	79.9	26.6	76	SW					10		W	0.02	0.5	D. clouds	
Lahore	28.79	731.4	29.51	749.6	93.1	33.9	53	Calm	1.7	0.8			4			0	0	Cloudy	
Belgaum	27.35	694.7	29.91	759.7	72.8	22.8	89	W	5.0	2.2			9		W			Showery	
Bangalore																			
Roorkee	28.60	726.5	29.46	748.4	95.6	35.3	50	NE	1.8	0.8			5			0	0		
Agra	28.94	735.1	29.50	749.2	88.2	31.2	39	W					3		W	0	0		
Trichinopoly																			
Nagpur	28.67	728.3	29.71	754.6	80.9	27.2	85	Calm	3.8	1.7			9			0.07	1.8	Gloomy	
Madras																			
Lucknow	29.17	741.0	29.54	750.2	84.8	29.3	77	SSW	1.9	0.8			10		S	0	0	Overcast	
Allahabad	29.26	743.2	29.57	751.0	80.7	27.1	60	SW	2.0	0.9			10		W	0.01	0.2	Overcast	
Patna	29.36	745.8	29.54	750.4	78.9	26.1	91	E	2.2	1.0			10	E	E	0.84	21.3	Overcast	
Hazaribagh	27.56	700.0	29.56	750.7	77.0	25.0	91	WNW	8.6	3.8			10		W	0.20	5.1	Thunder-storm	
Cuttack	29.49	749.0	29.57	751.1	83.9	28.8	80	SW	10.5	4.7			6			0.12	3.0	Thunder	
Calcutta (Alipore)	29.60	751.9	29.62	752.4	83.2	28.4	85	NNE	10.0	4.5			6		S	0	0	D. clouds	
Goalpara	29.29	743.8	29.68	753.8	76.2	24.6	98	SE	4.0	1.8			10			3.52	89.4	Raining	
Chittagong	29.69	754.0	29.78	756.4	80 6	27.0	89	S	17.5	7.8			10			0	0	Overcast	
Sibsagar	29.36	745.8	29.70	754.3	79.1	26.2	94	ESE	2.8	1.2			10	W	W	0.58	14.7	Gloomy	
Rangoon																			
Jubbulpore	28 32	719.3	29.69	754.1	74.5	23.6	88	NW	7.0	3.1			10	NW	NW	3.48	88.4	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.23	564.7	29.93	760.2	48.6	9.2	90	NW			2		9	SW		0.488	12.4		Ab. Dom. Morgini.
Stelvio	22.18	563.4	29.88	759.0	43.5	6.4		NW			2		10			0.165	4.2		Signora Ernesta Manfredi.
Udine	29.53	750.1	29.93	760.2	68.4	20.2	67	S	6.9	3.1			9			0.012	0.3		Prof. Giovanni Clodig.
Padua	29.78	756.3	29.88	759.0	78.1	25.6	63	SE	4.3	1.9			10			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.67	753.7	29.86	758.4	81.1	27.3	46	SW	7.4	3.3			2	W		0	0		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.59	726.2	29.86	758.5	69.8	21.0	65	NW			4		9			0.126	3.2		Prof. Trionfini Carlo.
Domodossola	28.89	733.8	29.88	758.9	68.5	20.3	76	Calm			0		9			0.016	0.4		Prof. Giuseppe Calza.
Milan	29.36	745.8	29.85	758.3	80.1	26.7	71	ENE			4		8	SE		0	0		Ab. Gio. Capelli.
Pavia	29.53	750.1	29.86	758.5	77.9	25.5	49	SW			4		5	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.99	736.3	29.86	758.4	69.8	21.0	70	SW	0	0			5	S		0.209	5.3		Prof. P. F. Denza.
Mondovi	28.00	711.3	29.84	757.8	73.4	23.0	56	NNW			4		5	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.71	754.7	29.93	760.2	75.4	24.1	79	SW			6		7	SW		0.354	9.0		Prof. L. Vassallo.
Genoa	29.78	756.3	29.94	760.4	77.0	25.0	66	SE	9.8	4.4			6	S		0.004	0.1		Prof. G. M. Garibaldi.
Piacenza	29.62	752.3	29.86	758.5	77.5	25.3	50	NNW			4		4			0	0		Dott. G. Manzi.
Parma	29.58	751.4	29.89	759.1	80.8	27.1	43	SW			6		2			0	0		Prof. P. Pigorini.
Florence	29.73	755.2	29.98	761.4	79.7	26.5	61	Calm			0		7	W		0.138	3.5		Cav. F. Meucci.
Leghorn	29.87	758.8	29.96	760.9	78.6	25.9	71	SSW	0	0			4	W		0.276	7.0		Prof. P. Monte.
Siena	28.80	731.6	29.97	761.2	75.6	24.2	91	SE	0	0			9	SW		0.114	2.9		Prof. L. Toscani.
Urbino	28.46	722.9	29.95	760.8	71.6	22.0	59	SSW			2		7			0.787	20.0		Prof. P. Serpieri.
Pesaro	29.90	759.5	29.95	760.7	76.5	24.7	79	E	6.3	2.8			8	SW		0.157	4.0		Prof. Luigi Guidi.
Ancona	29.82	757.5	29.93	760.1	75.9	24.4	69	SE			4		10	S		0.421	10.7		Prof. F. DeBosis.
Grosseto	29.89	759.3	30.00	762.0	82.0	27.8	79	N			4		8	SW		1.882	47.8		Avv. P. Ponticelli.
Rome	29.86	758.4	30.03	762.7	79.9	26.6	77	SW	16.8	7.5			10			0.598	15.2		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.89	759.1	30.08	764.0	82.8	28.2	69	SW			2		10	SSE		0.039	1.0		Prof. L. Palmieri.
Lecce	29.85	758.1	30.09	764.2	86.7	30.4	40	ENE	2.5	1.1			9			0	0		Prof. C. DeGiorgi.
Cosenza	29.20	741.7	30.04	763.0	93.2	34.0	34	NNW	3.8	1.7			8			0	0		Prof. F. D. Conti.
Cagliari	29.78	756.5	29.97	761.1	82.9	28.3	63	SE			2		10	W		0.098	2.5		Prof. A. Pacinotti.
Riposto, (Sicily)	29.94	760.5	29.99	761.7	86.0	30.0	53	NNW			2		0			0	0		Prof. F. Cafiero.
Palermo	29.75	755.6	29.99	761.7	90.9	32.7	45	E	1.3	0.6			5			0	0		Prof. G. Cacciatore.
Caltanissetta	28.17	715.6	29.99	761.8	86.0	30.0	27	S			4		0			0	0		Prof. A. Pagani.
Syracuse	29.93	760.1	30.00	762.0	87.8	31.0	44	SE			4		5	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.54	750.3	30.10	764.4	78.8	26.0	67	WSW	2.5	1.1			10	SW		0.244	6.2		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.68	753.9	29.76	756.0	68	20.0	97	NNW	10	4.5			10n					Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Mexico, Central Obs'y	23.18	588.8	30.19	766.9	58.1	14.5	71	W	0.1	0.05		1c	1s	E		0	0	Blue sky	Mariano Bárcena
																			Vicente Reyes.
																			Miguel Perez.
																			(Engineers in charge.)

NOTE.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	29.98	761.6	29.98	761.6	60.8	16.0		ENE			4					0	0		
Groningen	30.02	762.5	30.08	763.9	59.9	15.5		E			1					0	0		
Helder	30.06	763.4	30.06	763.4	58.3	14.6		ENE			4					0	0		
Utrecht	29.96	761.0	30.01	762.2	61.5	16.4	50	ENE			4		2			0	0	Light cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	30.04	763.1	30.10	764.5	55.8	13.2	75	NNW	13.2	5.9			3			0	0		
Brönö	29.91	759.7	29.95	760.7	51.8	11.0	90	SW	27	12			9			0.118	3.0		
Christiania	29.85	758.3	30.00	762.0	63.1	17.3	70	WSW	2	1			0			0	0		
Tromsö	29.69	754.1	29.73	755.2	48.6	9.2	76	SW	4	2			10			0.110	2.8		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra, (Azores)	29.87	758.7	30.06	763.5	68.0	20.0	92	W	8.7	3.9			10			0.256	6.5		Dr. J. A. Sampaio
Campo Major	29.10	739.2	30.11	764.8	68.9	20.5	80	ESE	1.3	0.6			8	SW		0.157	4.0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.14	765.6	30.23	767.8	75.2	24.0	70	SE	3.1	1.4			5			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.78	756.4	30.13	765.4	68.7	20.4	75	ENE	6.3	2.8			7	NW		0.083	2.1		The Staff.
Ponta Delgada, (Azores)	29.99	761.7	30.06	763.5	69.8	21.0	89	W	1.8	0.8			10			0.067	1.7	Light rain	

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

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

RUSSIAN SERIES.

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

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Warsaw	29.60	751.9	30.02	762.5	60.3	15.7	55	WNW	11	5			6						Astronomical Obs.
Wilna	29.31	744.4	29.72	754.9	54.1	12.3	72	W	18	8			10					Raining	Astronomical Obs.
Dorpat	29.11	739.3	29.35	745.4	49.6	9.8	94	NW	13	6			10					Raining	Physical Cabinet.
St. Petersburg	29.25	742.9	29.26	743.3	53.6	12.0	59	NE	4	2			8						Central Physical Obs
Kuopio	29.19	741.5	29.51	749.5	53.2	11.8	85	N	22	10			10					Raining	Ch. Forsten.
Zieff	29.18	741.2	29.80	757.0	57.2	14.0	51	WNW	18	8			6						Physical Cabinet.
Nikolaiev	29.91	759.6	29.98	761.4	63.3	17.4	57	NW	9	4			2						Kurdakof.
Kertch	29.98	761.6	30.00	762.1	73.8	23.2	84	S	7	3			6						Lagorio.
Moscow	28.95	735.3	29.49	749.1	51.3	10.7	64	S	13	6			8						Meteorological Obs.
Lugan	29.47	748.4	29.67	753.5	61.2	16.2	87	SSW	13	6			10			Blank	Blank		Meteorological Obs
Archangel	29.68	753.9	29.70	754.4	52.7	11.5	87	ESE	13	6			10						Ogorodnikof.
Tiflis	28.72	729.4	30.10	764.6	68.9	20.5	56	Calm	0	0			10						Physical Observatory.
Astrakhan	30.13	765.4	30.05	763.3	66.9	19.4	35	SSE	2	1			3						Sebastianof.
Kasan	29.65	753.1	29.91	759.8	59.0	15.0	49	SSE	7	3			10						Physical Cabinet.
Orenburg	29.64	752.8	30.00	762.1	57.6	14.2	85	E	13	6			5						Tschernischef.
Ekaterinburg	29.01	736.9	29.95	760.8	52.5	11.4	47	NE	13	6			5						Meteorological Obs.
Nukuss	29.72	754.9	29.95	760.7	70.3	21.3	40	NW	7	3			1						
Kasaly																			Bobrof.
Tashkend	28.24	717.3	29.88	758.9	73.8	23.2	73	Calm	0	0			4						Michelson.
Barnaul	29.15	740.4	29.65	753.1	68.2	20.1	47	SE	0	0			1						Meteorological Obs.
Yeniseisk	29.60	751.8	29.74	755.5	56.7	13.7	80	NE	2	1			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.43	747.6	29.58	751.2	74.8	23.8	62	Calm	0	0			5						Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					60.8	16.0	89	E	9	4			5						

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

SPANISH SERIES.

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

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.91	708.8			67.8	19.9	62	SW	20.9	9.34		2	1	NW		0.091	2.3		The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.91	759.6	29.99	761.7	80.1	26.7	84	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.10	764.6	30.20	767.1	75.7	24.3	58	SSW	9.2	4.1		2	2	NW	NW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.95	760.6	81.7	27.6	92	SE				8cs	1kn			0.020	0.50	Cloudy	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.74	755.4	29.78	756.4	57.2	14.0	57	N			4		3			0	0		
Umea	29.77	756.1	29.82	757.4	57.9	14.4	53	N			4		1			0	0		
Hernosand	29.80	757.0	29.85	758.3	63.0	17.2	54	NW			4		1			0	0		
Stockholm	29.70	754.3	29.87	758.5	56.5	13.6	53	N			6		3			0.331	8.4		
Wisby	29.85	758.2	29.91	759.7	52.9	11.6	86	N			6		3			0.283	7.2		
SUB-SERIES.																			
Upsala	29.81	757.1	29.88	759.0	58.5	14.7	57	NNW	13.2	5.9			2	N	N	0.002	0.06		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.53	724.7	29.90	759.5	73.4	23.0	49	S			1		2			0.571	14.5	Clear	The Observatory.
Zurich	28.35	720.2	29.97	761.1	62.4	16.9	91	S			1		8			0.236	6.0	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —2.5 mm; Thermometer, +3.9 cent.; Relative Humidity, —12 per cent.

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

TURKISH SERIES.

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

Constantinople			30.01	762.2	82.0	27.8	56	SSW	4	2.0			3		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			B. Stefanidès.
Salonica			30.08	764.0	91.0	32.8		S			1		0						A. Bertrand.
Valona			30.18	766.5	85.1	29.5		SW			2		5			0	0	Cloudy	Imperial Observatory.
Varna			29.88	759.0	75.2	24.0		SW			2		8						
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.79	756.7	29.91	759.6	88.0	31.1	68	WNW			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			30.16	766.1	56	13.3		Calm	0	0		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B.			30.14	765.5	52	11.1	96	Calm	0	0		5cs	5ks	N	N	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			30.13	765.3	58	14.4	89	Calm	0	0			10s		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.94	760.5	30.13	765.3	49.3	9.6	100	E			1	0	0			0	0	Foggy	James Smith, M. A.
Dalhousie, N. B.	29.99	761.7			51	10.6	85	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	29.56	750.8	29.60	751.8	56.2	13.4	97	NE					10			0.40	10.2	Heavy rain	W. H. Bevis.
*Father Point, Quebec			30.14	765.5	46	7.8	92	W	6	2.7		0	2s		Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.09	764.3	30.16	766.1	54.9	12.7	88	NE	4	1.8			10s			0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.90	759.4	46	7.8	98	S	4	1.8		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.33	745.0	30.11	764.8	59.7	15.4	83	Calm			0	2c	3s			0	0	Fair	H. J. Strang, M. A
Granton, Ontario	29.01	736.8	30.10	764.5	55	12.8	93	Calm			0	0	0			0	0	Clear	James Grant.
*Halifax, N. S.	29.89	759.2	30.02	762.5	63	17.2	78	NE	8	3.6		2ck	5n		E	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.81	757.2	30.16	766.1	59.7	15.4	76	E			2	3c	4s	W		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	30.19	766.8	30.21	767.3	55	12.8	81	NE			2	1k	1s			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.83	757.7	30.20	767.1	57	13.9	78	NE	5	2.2		0	0			0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.94	760.5	30.14	765.5	58	14.4	77	NE	4	1.8		0	0			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.46	748.3	30.15	765.8	52	11.1	100	NE	3	1.3		2cs	0	SW		0	0	Fair	Rev. R. Mosley
Peterboro, Ontario	29.41	747.0	30.16	766.1	53.7	12.1	86	Calm			0		Fog			0	0	Dense fog	J. F. Jeffers, B. A.
Port Dover, Ontario	29.44	747.8	30.13	765.3	54	12.2	93	NE	8	3.6		10k	0	E		0	0	Fair	H. Morgan.
Port Hastings, N. S.																			Peter Grant
Port Stanley, Ontario	29.47	748.5	30.01	762.2	57	13.9	94	NE	3	1.3		8k	0	NE		0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.84	757.9	30.15	765.8	58	14.4	82	Calm	0	0		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.72	754.9	30.19	766.8	44	6.7	100	SE	2	0.9			Fog			0	0	Foggy	W. H. McIntyre.
St. John, N. B.	29.96	761.0	30.12	765.0	55	12.8	87	NE	7	3.1			9ks			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.41	747.0	30.11	764.8	55	12.8	84	SE	2	0.9		8cs	0			0	0	Cloudy	K. Stewart.
Stayner, Ontario																			R. J. Cole.
Stratford, Ontario	28.85	732.8	30.13	765.3	50.1	10.1	92	Calm	0	0		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B.	30.11	764.8	30.14	765.5	62	16.7	86	Calm	0	0		8ck	8ks	Calm	E	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.78	756.4	30.16	766.1	56	13.3	79	NE	3	1.3		5ck	0	W		0	0	Fair	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery
Sub-Series.																			
St. Johns, Newfoundland					59.0	15.0	65	W				2c	5s			0	0	Fair	John Delany

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

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

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.92	760.0	30.14	765.5	55	12.8	79	Calm	0	0		0	0			0	0	Clear	
Alpena, Michigan	29.42	747.3	30.06	763.5	59	15.0	87	S	6	2.7		5c	0	Calm		0	0	Fair	
Atlantic City, New Jersey	30.08	764.0	30.10	764.5	61	16.1	71	N	10	4.5		0	0			0.24	6.1	Clear	
Augusta, Georgia	29.91	759.7	30.09	764.3	71	21.7	71	SE	4	1.8		5ck	0	SE		0	0	Fair	
Baltimore, Maryland	30.11	764.8	30.16	766.1	58	14.4	64	N	4	1.8		0	0			0.01	0.3	Clear	
Barnegat, New Jersey	30.06	763.5	30.08	764.0	62	16.7	77	N	15	6.7		0	0			0.09	2.3	Clear	
Bismarck, Dakota	28.12	714.2	29.78	756.4	45	7.2	84	E	4	1.8		1c	Haze	Calm		0	0	Hazy	
Boise City, Idaho	27.06	687.3	29.62	752.3	52	11.1	40	Calm	0	0		1k	0	Calm		0	0	Clear	
Boston, Massachusetts	29.93	760.2	30.08	764.0	56	13.3	62	N	12	5.4		8cs	Haze	NE		0	0	Cloudy	
Brackettville, Texas	28.77	730.7	29.76	755.9	74	23.3	85	Calm	0	0		8c	0	Calm		0	0	Cloudy	
Breckenridge, Minnesota	28.89	733.8	29.89	759.2	45	7.2	100	NE	6	2.7		0	Fog		NE	0.60	15.2	Fair	
Brownsville, Texas	29.86	758.4	29.93	760.2	78	25.6	86	S	5	2.2		8c	0	Calm		0	0	Fair	
Buffalo, New York	29.41	747.0	30.12	765.0	56	13.3	87	E	2	0.9		2c	Fog	E	Calm	Inap.	Inap	Fair	
Burlington, Vermont	29.89	759.2	30.15	765.8	56	13.3	82	NE	3	1.3		5c	0	NE		0	0	Fair	
Cairo, Illinois	29.55	750.6	29.93	760.2	57	13.9	74	SE	3	1.3			10ks		Calm	0	0	Threatening	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.74	679.2	30.24	768.1	62	16.7	41	Calm				0	0			0	0	Clear	
Campo, California	27.28	692.9	29.85	758.2	50	10.0	53	E	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.01	762.2	30.01	762.2	69	20.6	75	N	16	7.2		5k	0	N		0	0	Fair	
Cape Henry, Virginia	30.08	764.0	30.10	764.5	66	18.9	68	N	12	5.4		0	0			0.11	2.8	Clear	
Cape Lookout, N. Carolina	30.08	764.0	30.10	764.5	67	19.4	79	N	16	7.2		5k	0	N		0	0	Fair	
Cape May, New Jersey	30.08	764.0	30.11	764.8	60	15.6	65	N	12	5.4		0	0			1.22	31.0	Clear	
Charleston, South Carolina	30.04	763.0	30.10	764.5	69	20.6	84	NE	8	3.6		1cs	0	W		Inap.	Inap.	Clear	
Cheyenne, Wyoming	24.8	631.6	30.02	762.5	49	9.4	37	W	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.26	743.2	29.93	760.2	64	17.8	83	SE	6	2.7		2cs	5s	Calm	Calm	0	0	Fair	
Cincinnati, Ohio	29.32	744.7	29.95	760.7	61	16.1	77	E	3	1.3		10cs	0	E		0	0	Cloudy	
Cleveland, Ohio	29.38	746.2	30.10	764.5	59	15.0	81	SE	2	0.9		8cs	0	N		0	0	Fair	
Concho, Texas	28.05	712.5	29.66	753.4	71	21.7	84	N	4	1.8		8cs		N		0	0	Clear	
Corsicana, Texas	29.43	747.5	29.88	758.9	75	23.9	86	SW	10	4.5		2cs	5s	Calm	NW	0.05	1.3	Fair	
Davenport, Iowa	29.25	742.9	29.87	758.7	61	16.1	77	E	8	3.6			10s		E	0	0	Cloudy	
Denison, Texas	29.09	738.9	29.86	758.4	73	22.8	90	W	6	2.7		8k	0	W		0.74	18.8	Cloudy	
Denver, Colorado	24.84	630.9	30.17	766.3	46	7.8	54	S	6	2.7		0	0			0.12	3.0	Clear	
Detroit, Michigan	29.37	746.0	30.03	762.7	60	15.6	91	E	4	1.8		5cs	5k	NE	Calm	0	0	Cloudy	
Dodge City, Kansas	27.30	693.4	29.52	749.8	59	15.0	64	W	22	9.8		0	1s		W	0	0	Clear	
Dubuque, Iowa	29.20	741.7	29.87	758.7	61	16.1	77	SE	4	1.8			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.20	741.7	29.85	758.2	61	16.1	88	Calm	0	0			10s		W	1.61	40.9	Cloudy	
Eagle Pass, Texas	29.11	739.1	29.82	757.4	74	23.3	85	SE	1	0.4		1c	0	NW		0	0	Clear	
Eastport, Maine	30.01	762.2	30.08	764.0	56	13.3	80	N	10	4.5			10s		Calm	Inap.	Inap.	Cloudy	
Erie, Pennsylvania	29.38	746.2	30.08	764.0	62	16.7	88	Calm	0	0		2c	2s		S	0	0	Fair	
Escanaba, Michigan	29.34	745.2	29.97	761.2	62	16.7	77	S	8	3.6			10s			0	0	Clear	
Florence, Arizona	28.26	717.8	29.86	758.4	90	32.2	32	S				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.12	612.6	30.12	765.0	59	15.0	44	SW	7	3.1		0	0			0	0	Clear	
Fort Craig, New Mexico	25.59	650.0			56	13.3	57	NE	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.24	742.7	29.76	755.9	65	18.3	94	SW	2	0.9		2cs	0	SW		0.81	20.6	Fair	
Fort Griffin, Texas	28.70	729.0	29.94	760.5	67	19.4	90	NW	4	1.8			2s		Calm	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.70	729.0	29.77	756.1	66	18.9	59	NW	8	3.6		0	0			1.06	26.9	Clear	
Fort Sully, Dakota	28.25	717.5	29.90	759.4	47	8.3	62	S	1	0.4		0	0			0	0	Clear	
Galveston, Texas	29.92	760.0	29.96	761.0	82	27.8	74	SW	6	2.7		5k	0	SW		0	0	Fair	
Grand Haven, Michigan	29.37	746.0	30.00	762.0	57	13.9	93	SE	5	2.2		0	8s		SE	0	0	Cloudy	
Indianapolis, Indiana	29.20	741.7	29.97	761.2	60	15.6	82	E	8	3.6			10s		Calm	0	0	Cloudy	
Indianola, Texas	29.93	760.2	29.96	761.0	83	28.3	79	S	8	3.6		2k	0	S		0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.99	761.7	30.01	762.2	80	26.7	86	E	1	0.4		5k	0	E		0.19	4.8	Fair	
Keokuk, Iowa	29.19	741.4	29.78	756.4	63	17.2	83	SE	14	6.3			10s		Calm	0	0	Cloudy	
Key West, Florida	29.94	760.5	29.97	761.2	85.0	29.4	71	Calm	0	0		2k	1ks	SE	E	0	0	Hazy	
Kittyhawk, North Carolina	30.07	763.8	30.10	764.5	64	17.8	90	NW	15	6.7			10s		N	0.02	0.5	Cloudy	
Knoxville, Tennessee	29.05	737.9	30.04	763.0	60	15.6	81	NE	2	0.9		3ck	0	SW		0	0	Fair	
La Crosse, Wisconsin	29.14	740.1	29.85	758.2	63	17.2	78	SE	4	1.8			10s		SE	0	0	Cloudy	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	69	20.6	75	N	2	0.9		2ck	0	Calm		0	0	Fair	
Laredo, Texas					78	25.6	77	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	28.81	731.8	29.61	752.1	64	17.8	94	SW	2	0.9			10n		Calm	0.48	12.2	Light rain	
Los Angeles, California	29.45	748.0	29.78	756.4	59	15.0	94	NW	1	0.4			Fog			0	0	Foggy	
Louisville, Kentucky	29.42	747.3	29.97	761.2	61	16.1	82	NE	3	1.3		8cs	Fog	W	Calm	0	0	Cloudy	
Lynchburg, Virginia	29.48	748.8	30.16	766.1	63	17.2	78	Calm	0	0			10s		SE	0	0	Cloudy	
Maricopa Wells, Arizona					68	20.0	52	NE				0	0			0	0	Clear	
Marquette, Michigan	29.24	742.7	29.92	760.0	62	16.7	61	SW	4	1.8			10s		Calm	0	0	Cloudy	
Mason, Texas	28.36	720.3	30.07	763.8	70	21.1	90	Calm	0	0		2c	2s	Calm	Calm	0	0	Fair	
Memphis, Tennessee	29.59	751.6	29.89	759.2	67	19.4	90	SE	5	2.2			10n		SE	0.23	5.8	Light rain	
Milwaukee, Wisconsin	29.33	745.0	30.00	762.0	61	16.1	82	SW	1	0.4			8s		SW	0	0	Cloudy	
Mobile, Alabama	29.98	761.5	30.02	762.5	76.5	24.7	81	N	3	1.3		0	0			0	0	Clear	
Montgomery, Alabama	29.89	759.9	30.02	762.5	68	20.0	81	Calm	0	0		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	29.05	737.9	30.09	764.3	60	15.6	82	Calm	0	0		10c	Haze	W		Inap	Inap.	Cloudy	
Mt. Washington, N. H.	23.92	607.6	30.28	769.1	42	5.6	49	NE	15	6.7		2c	Haze	NW	Calm	0	0	Clear	
Nashville, Tennessee	29.46	748.3	29.98	761.5	65	18.3	78	N	3	1.3		5c	0	SW		0	0	Fair	
New Haven, Connecticut	29.97	761.2	30.09	764.3	57	13.9	75	N	10	4.5		10ck	0	Calm		0	0	Cloudy	
New London, Connecticut	30.03	762.7	30.08	764.0	57	13.9	75	NW	6	2.7			10s		N	Inap.	Inap	Cloudy	
New Orleans, Louisiana	29.93	760.2	29.99	761.7	80	26.7	84	Calm	0	0		1k	0	S		Inap.	Inap.	Clear	
Newport, Rhode Island	30.00	762.0	30.04	763.0	57	13.9	81	N	12	5.4			10ks		NE	0	0	Threatening	
New York, New York	29.95	760.7	30.12	765.0	61	16.1	66	NW	7	3.1		0	Haze			0.01	0.3	Clear	
Norfolk, Virginia	30.07	763.8	30.13	765.3	62	16.7	91	N	8	3.6		5k	5ks	N	N	0.30	7.6	Cloudy	
North Platte, Nebraska	27.01	686.0	29.53	750.0	53	11.7	70	NW	20	8.9		0	0			2.47	62.7	Clear	
Olympia, Washington Ter.	29.62	752.3	29.65	753.1	52	11.1	86	S	1	0.4			10ks		S	0.16	4.1	Cloudy	
Omaha, Nebraska	28.62	726.9	29.64	752.8	64	17.8	94	E	4	1.8			10s		NE	0.82	20.8	Cloudy	
Oswego, New York	29.82	757.4	30.14	765.5	57	13.9	84	Calm	0	0		0	0			Inap.	Inap.	Clear	
Pembina, Dakota	28.98	736.1	29.81	757.2	44.5	6.9	88	S	6	2.7		8c	0	Calm		0	0	Fair	
Philadelphia, Pennsylvania	30.06	763.5	30.11	764.8	58	14.4	69	N	12	5.4		1cs	Sm'e	Calm	Calm	0.25	6.3	Clear	
Phœnix, Arizona					74	23.3	32	S				0	0			0	0	Clear	
Pike's Peak, Colorado	17.98	456.7	30.19	766.8	30	— 1.1	48	N	27	12.1		0	0			Inap.	Inap.	Clear	
Pioche, Nevada	24.14	613.1	29.91	759.7	51	10.6	22	S	1	0.4		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.09	764.3	54	12.2	100	E	1	0.4			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.41	747.0	30.07	763.8	56	13.3	87	E	3	1.3			10ks		E	0	0	Cloudy	
Portland, Maine	30.04	763.0	30.09	764.3	57	13.9	63	N	9	4.0		5k	Haze	NE		0	0	Fair	
Portland, Oregon	29.68	753.9	29.78	756.4	53	11.7	93	S	3	1.3		2c	2s	Calm	Calm	0.01	0.3	Fair	
Prescott, Arizona					58	14.4	44	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.98	761.5	29.99	761.7	84	28.9	71	E	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.40	746.7	29.75	755.6	68	20.0	34	NW	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.52	749.8	30.13	765.3	54	12.2	86	W	5	2.2		0	0			Inap.	Inap.	Clear	

UNITED STATES SERIES.—Continued.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.26	743.2	29.82	757.4	52.6	11.4	96	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.08	753.9	29.76	755.9	66	18.9	46	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.28	743.7	29.84	757.9	64	17.8	78	SE	12	5.4			10s		Calm	0.06	1.5	Cloudy	
St. Marks, Florida	29.97	761.2	29.99	761.7	73	22.8	95	Calm	0	0		0	0			0	0	Clear	
St. Paul, Minnesota	28.98	736.1	29.77	756.1	63	17.2	78	SE	1	0.4			10n		Calm	Inap.	Inap	Light rain	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.73	653.5	30.06	763.5	46	7.8	47	SE	6	2.7		0	0			0	0	Clear	
San Antonio, Texas	29.35	745.5	29.80	756.9	77	25.0	90	Calm	0	0		8ck	0	SW		Inap.	Inap.	Fair	
San Diego, California	29.73	755.1	29.80	756.9	65	18.3	94	NW	3	1.3			Fog			0	0	Foggy	
Sandusky, Ohio	29.41	747.0	30.07	763.8	62	16.7	83	SE	6	2.7		8ck	Haze	Calm	Calm	0.09	2.3	Fair	
Sandy Hook, New Jersey	30.08	764 0	30.10	764.5	63	17.2	61	N	11	4.9		2ck	0	N		Inap.	Inap.	Fair	
San Francisco, California	29.77	756.1	29.83	757.7	53	11.7	93	W	12	5.4			Fog		Calm	0	0	Foggy	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	42	5.6	52	E	1	0.4		Haze	0			0	0	Clear	
Savannah, Georgia	29.98	761.5	30.07	763.8	74	23.3	85	NE	8	3.6		0	5s		NE	0	0	Fair	
Shreveport, Louisiana	29.69	754.1	29.90	759.4	77	25.0	91	S	4	1.8		0	8cs		S	0 20	5.1	Fair	
Smithville, North Carolina	30.09	764.3	30.12	765.0	64	17.8	83	N	10	4.5		2c	1ks	NW	N	0	0	Fair	
Springfield, Massachusetts	29.92	760.0	30.05	763.3	55	12.8	74	Calm	0	0		9ck	0	E		0	0	Cloudy	
Stanwix, Arizona					76	24.4	46	NW				0	0			0	0	Clear	
Stockton, Texas					69	20.6	90	Calm	0	0		0	5s		Calm	0	0	Fair	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	58	14.4	81	NE	20	8.9		8cs;k	0	NE		0	0	Fair	
Toledo, Ohio	29.39	746.5	30.06	763.5	56	13.3	93	Calm	0	0		5ck	Haze	NW	Calm	0	0	Fair	
Tucson, Arizona	27.53	699.2	30.08	764.0	82	27.8	40	NW				0	2ks		NW	0.33	8.4	Fair	
Tybee Island, Georgia	30.01	762 2	30.04	763.0	80	26 7	74	E	20	8.9		0	8ks		E	0	0	Cloudy	
Umatilla, Oregon	29.44	747.8			53	11.7	68	SE	4	1.8		8c	2s	Calm	Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.74	755.4	29.99	761.7	74	23.3	90	S	6	2.7			10s		SW	0	0	Cloudy	
Virginia City, Montana	24.28	616.7	29.76	755.9	44	6.7	52	Calm	0	0		2c	0	Calm		0	0	Clear	
Visalia, California	29.43	747.5	29.79	756 7	61	16.1	60	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.05	763.3	30.17	766.3	57	13.9	76	Calm	0	0		0	Sm'e			0	0	Clear	
Wickenburg, Arizona					80	26.7	40	SW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.04	763.0	30.12	765.0	63	17.2	83	NE	6	2.7			10s		N	0	0	Cloudy	
Winnemucca, Nevada	25.62	650.7	29.98	761.5	39	3.9	39	NE	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	29.97	761.2	30.02	762.5	61	16.1	82	NE	10	4.5			10s		NE	0	0	Cloudy	
Yankton, Dakota	28.54	724.9	29.79	756.7	60	15.6	91	NW	4	1.8			10s		E	0.20	7.4	Cloudy	
Yuma, Arizona	29.61	752.1	29.76	755.9	75	23.9	20	S	8	3.6		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.87	758.7	29.92	760.0	46.0	7.8	96	SE	10	4.5		0	0			2.10	53.3	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.93	760.2	29.95	760.7	83	28.3	72	Calm	0	0		0	0			0	0	Clear.	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	79	26.1	82	N	3	1.3		2c	2ks	SE		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.88	758.9	29.96	761.0	83	28.3		E			2					0	0	Clear	F. M Everett.
St. Thomas, W. I.					80	26.7	82	E				4ck	2ks	E		0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.87	758.7	29.89	759.2	83	28.3	87	E				2c	2k		NE			Clear	L. V. Bigard.
Bridgetown, Barbados, W. I	30.03	762.7	30.05	763.3	85	29.4	72	E	2	0.9		5c	5ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.02	762.5	83	28.3	79	E			3	5k	5s	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.26	641.6			65.0	18.3	89	N			1		10n;s			0.37	9.4	Light rain	Thomas Herran.
Honolulu, Oahu, H. I.	30.10	764.5	30.12	765.0	73.5	23.1		NE			6					0.01	0.3		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672 (?) m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.: Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.83	757.7	59	15.0	55	12.8	100	SW	20	8.9			6		W	0	0			Foggy	
Navy Yard, Pensacola, Fla.	30.15	765.8			78	25.6	78	NNE	5	2.2			1			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.11	764.8	64	17.8	66	18.9	79	NE			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	29.71	754.6	70.5	21 4	68	20.0	95	NW			3		4k;s;hz		NW	2.15	54.6			Clearing	
Adams, S. 25° 24′, W. 44° 16′	30.33	770.4	74	23.3	72	22.2	85	SSE			3		3		SE	Light	Light	Light	SSE	D. clouds	
Alert, Yokohama, Japan	29.86†	758.4†	70	21.1	70	21.1	100	WNW			2		4		NW			Smooth		D. clouds	
Alliance, Smyrna, Turkey	30.10	764.5	81	27.2	82	27.8	60	W			4		0							Clear	
Ashuelot, Che-foo, China	29.84	757.9	82	27.8	78	25.6	73	S			3		0							Blue sky	
Canonicus, New Orleans, La	30.04	763.0	56	13.3	81	27.2	87	SE			1		4							Fair	
Colorado, New York, N. Y.	30.15	765.8	64	17.8	63	17.2	67	N	12	5.4			3		N	0	0			Fair	
Despatch, Constantinople, Turkey.	30.15	765.8	78	25.6	76	24.4	77	S			2		4		Calm			Smooth		Pleasant.	
Essex, N. 38° 00′, W. 32° 11′	30.04	763.0	74	23.3	73	22.8	100	NNE			1		10			Light	Light	Moderate.	S&W	Overcast	
Franklin, Norfolk, Va.	30.18	766.6	62	16.7	64	17.8	77	N	10	4.5			2		N	2.	51.			Cloudy	
Frolic, S. 18° 21′, W. 38° 38′	30.30	769.6	76	24.4	80	26.7	58	NNE			4		5k		N&E	0	0	Ground	N&E	D. clouds	
Gettysburg, Naples, Italy	29.92‡	760.0‡			82	27.8	92	S			1		9		Calm					Showery	
Kearsarge, N. 22° 33′, E. 115° 25′	30.07	763.8			81	27.2	96	Calm			0		8		SW	0	0	Smooth		Hazy	
Lackawana, Neeah Bay, W. T.	29.60	751.8			53	11.7	93	ENE			5		10		NW			Ground	E	Squally	
Marion, Constantinople, Turkey.	30.05	763.3	75	23.9	78	25.6	65	S			2		8		S	0	0	Smooth		D. clouds	
Michigan, Erie, Pa.	29.59	751.6	64	17.8	64	17.8	78	E			1		2		NE					Fair	
Monocacy, Yokohama, Japan	30.18	766 6	69	20.6	71	21.7	100	WNW			2		4		WNW	Blank	Blank			D clouds	
New Hampshire, Port Royal, S. C.	30.24	768.1			74	23.3	95	NE	20	8.9			6		NE	0	0			D. clouds	
Omaha, Caldera, Chili	30.08	764.0	63	17.2	58	14.4	88	Calm	0	0			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.08†	764 0†	68	20.0	65	18.3	81	SE			2		10					Long	W	D. clouds	
Ossipee, Norfolk, Va.	30.16	766.1	66	18.9	61	17.8	89	N			2		7		NE					D. clouds	
Palos, Shanghai, China	30.09	762.0	75	23.9	74	23.3	86	ENE			1		2			0	0			Clear	
Plymouth, New York, N. Y.	30.39	771.9	65	18.3	61	16.1	71	NE			3		0							Clear	
Ranger, Nagasaki, Japan	30.10	764.5			75	23.9	86	SW			0–1		10		Calm					Cloudy	
Rio Bravo, Brownsville, Texas	29.83	757.7			77	25.0	95	SSE			1		2		Calm					D. clouds	
Santee, Annapolis, Md.	30.20	767.1	62	16.7	59	15.0	76	NW			1					0.01	0.3			Clear	
St. Louis, League Island, Pa	30.00	762.0	63	17.2	57	13.9	94	NNW	2	0.9			0			0.26	6.6			Clear	
Tennessee, Yokohama, Japan	29.70	754.4	71	21.7	69	20.6	95	NW	5	2.2			4		N&W	2.03	51.6	Light	N&E	D. clouds	
Trenton, Marseilles, France	30.02†	762.5†	78	25.6	75	23.9	90	SW	10	4.5			3		S&W	0	0			D. clouds	
Vandalia, N. 36° 05′, E. 27° 10′	30.05	763.3	80	26 7	80	26.7	74	NW			4		0					Long	NW	Blue sky	
Wabash, Boston, Mass.	30.10	764.5	58	14.4	57	13.9	63	N	6	2.7			8		Calm	0	0			D. clouds	
Wyoming, Washington, D. C.	30.46†	773.7†	60	15.6	63	17.2		E			1		9		S&E					D. clouds	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio Hong Kong, China.					83	28.3		WSW			3		2		SW			Clear	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

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

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 35° 10′, E. 144° 03′			29.97†	761.2†	75	23.9		WSW			4		k		W	Heavy	W	Raining	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 42° 32′, W. 55° 6′	W½S		29.97	761.2	65.5	18.6	86	ESE			6		10			Heavy		Drizzling	Capt. A. Jaeger.
S. S. Ohio Bremerhafen.			30.07	763.8	60.5	15.8	52	Var.			1							Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 41° 45′, W. 64° 31′			*29 68	753.9*	66	18.9		ENE			7		10		E	Heavy	ESE	Raining	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 34° 50′, W. 75° 35′	WSW	6	30.03	762.7	71	21.7	80	NNW	13	5.8			8ks		N	Short		Cloudy	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 10, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.09	764.2	81.0	27.2	52	NW			2		1			0	0	Clear	Michel.
Algiers			30.08	764.1	79.9	26.6	58	NNE			1		0			0	0	Clear	Peter.
La Calle			30.10	764.5	82.8	28.2	74	N			1		7			0	0	Cloudy	Fleury.
Tunis			30.11	764.7	95.0	35.0		E			4		6			0	0	Fair	Jacques.
Sfax			30.12	765.0	89.6	32.0		SE			3		1			0	0	Clear	Husson.
Saida			30.04	763.1	83.7	28.7		N			1		1			0	0	Clear	Millot.
Tebessa			30.11	764.7	82.8	28.2		NE			1		6			0	0	Fair	Bourgeois.
Geriville			30.01	762.3	84.9	29.4	9	N			3		3			0	0	Fair	Lemaillot.
Laghouat			30.09	764.2	86.0	30.0	41	W			2		0			0	0	Clear	François.
Biskra			30.11	764.7	95.7	35.4	34	SE			4		4			0	0	Fair	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.43	747.6	29.98	761.5	58.1	14.5	90	NE			2		10			0.102	2.6	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.29	743.9	30.05	763.2	61.2	16.2	55	W			1		2			0	0		Dr. Wierzbiski.
Eperies	29.11	739.4	29.97	761.3	62.2	16.8	44	N			3		7cs			0	0		Julius Mikolik.
Gratz	28.82	731.9	30.07	763.6	54.9	12.7	92	E			2		10			0.240	6.1		Andreas Rospini.
Hermannstadt	28.44	722.3	29.84	758.0	55.4	13.0	95	NW			1		10			0.543	13.80	Raining	Prof. Reissenberger.
Kremsmünster	28.70	729.0	30.04	763.1	53.2	11.8	91	NE			2		10			0.409	10.4		Prof. C. Wagner.
Lemberg	28.98	736.1	29.95	760.8	59.0	15.0	82	NE			1		3			0	0		Dr. T. Stanecki.
Pola	29.80	756.8	29.90	759.5	76.5	24.7	57	SW			2		9cks			0	0		I.R. Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.67	753.5	29.95	760.7	51.1	10.6	100	Calm			0		10			0.413	10.50		Karl Stancel.
Trieste	29.81	757.2	29.91	759.8	73.4	23.0	78	E			1		1			0	0		P. Busin.
Vienna	29.35	745.5	30.05	763.2	55.8	13.2	89	W			1		10			0.532	13.5	Raining	I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.56	725.3	30.07	763.6	54.3	12.4	90	SW			1		10			0.016	0.4		
Brussels	29.82	757.5	30.02	762.5	59.9	15.5	78	E			1		10		SW	0	0		Royal Observatory.
Furnes	29.98	761.4	30.00	762.0	65.3	18.5	67	NNW			2		2			0	0		
Maeseyck	29.91	759.6	30.04	762.9	60.3	15.7	92	S			2		10			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer.
Aberdeen	29.99	761.7	30.08	764.0	53.8	12.1		SSE	17	7.6			6			0	0	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	29.97	761.2	29.99	761.7	62	16.7		ENE			2		4					D. clouds	William McNeil.
Armagh, Observatory			29.90	759.4	56.7	13.7		SE	14	6.3			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.97	761.2	58.7	14.8		ESE	25	11.2			8					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.80	756.9	58.9	14.9		SE			3–4		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.64	752.8	30.03	762.7	57.7	14.3		E			0		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A. [H. C
Cambridge, Observatory			30.01	762.2	67.0	19.4		E			1		7					D. clouds	H. Todd.
Cardington			30.02	762.5	65.0	18.3		E			1		9					Overcast	John McLaren.
Chatham, School M. E.	29.87	758.7	30.00	762.0	63.2	17.3		NE			2		7					Blue sky	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.50	723.9	29.96	761.0	58.0	14.4		SE			5		6					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.91	759.7	29.94	760.5	58	14.4		SSE			6		8					D. clouds	J. Mac Gowan.
Dover	30.00	762.0	30.03	762.7	63	17.2		ENE			2		5					½ clouded	J. Costello.
Eccles, (near Manchester)			30.00	762.0	59.9	15.5		SE	3.0	1.3			10					Overcast	Thomas Mackereth.
Falmouth, Observatory	29.67	753.6	29.90	759.4	57.4	14.1		SE			4		10					Foggy	The Staff.
Fort Napier, (Natal)	27.54	699.5	29.74	755.4	71.4	21.9		E			3		4					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.03	762.7	79.0	26.1		Calm			0		4					Raining	
Galway, Queen's College			29.69	754.1	58	14.4		SE			3		10					Raining	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.06	763.5	78.3	25.7		E			3		0					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.79	756.7	30.00	762.0	58.8	14.9		SE			2		6					D. clouds	D. G. Maclean.
Great Yarmouth	30.03	762.7	30.04	763.0	62	16.7		E			3		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.84	757.9	30.01	762.2	63.5	17.5		ENE			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.75	755.6	29.96	761.0	62	16.7		ESE			2		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.89	759.2	60	15.6		SE			6		10n			0.5	13.	Drizzling	M. P. Moyle.
Holyhead	29.87	758.7	29.92	760.0	65	18.3		SSE			3		3					D. clouds	John Tilston.
Jersey	29.72	754.9	30.01	762.2	60.8	16.0		SE			2		9					Fog & mist	J. Fisher.
Kew, Observatory			30.02	762.5	60.5	15.8		ESE	6	2.7			10c					Hazy	The Staff.
Kingstown	29.86	758.4	29.89	759.2	60	15.6		SE			5		9					Gloomy	George Mitchell.
Leicester, Museum			30.02	762.5	60.8	16.0		E			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.98	761.5	88.6	31.4		W			1		2					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn																			W. D. Penny.
Nassau, (Bahamas)			29.99	761.7	87.0	30.6		E			1		6					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.86	758.4	30.05	763.3	63.5	17.5		ESE			2		10ck		E	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.49	749.0	30.01	762.2	56.8	13.8		E			2–3		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.00	762.0	63	17.2		SE			1		10					Gloomy	F. Lucas
Plymouth	29.86	758.4	29.94	760.5	62.4	16.9		SE			3		10					Overcast	John Merrifield.
Roche's Point	29.67	753.6	29.72	754.9															W. Kennedy.
Saint Ann's Head	29.72	754.9	29.87	758.7	61	16.1		SE			6		10					Raining	John C. Walker.
Sandwick Manse, (Orkneys)			30.01	762.2	54.2	12.3		SSE	19	8.5			4					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.86	758.4	83.8	28.8		S			1		3			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.81	757.2	30.04	763.0	61.4	16.3		S			1		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	29.97	761.2	30.00	762.0	66.1	18.9	53	S			3		2			0.025	0.63	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					56.8	13.8		E			2		10					Hailing	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.91	759 7	54	12.2		ESE			1		10					Overcast	John Smith.
Stratfield Turgiss	29.79	756.7	30.01	762.2	64.3	17.9		SE			1		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.00	762.0	57	13.9		SSE			3		4					D. clouds	John Trotter.
Truro, Royal Institution			29.92	760.0	59	15.0		SE			6		10					Raining	W. Newcombe.
Valencia, Observatory			29.64	752.8	60.3	15.7		SE	27	12.1			10					Hazy	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		E			4		10			0.20	5.1		Henry Mercer.
Cape Good Hope, Obs'y	30.20	767.1	30.24	768.1	62.0	16.7	77	S	6	2.7		2	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.51	774.9	41.0	5.0	86	SE			2		5k			0.05	1.3		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.05	763.3	61.5	16.4		S			2		7k			0	0	Fine; cloudy	Andrew Gibb.
Mauritius, Observatory	30.01	762.2	30.20	767.1	72.9	22.7	61	ESE	22.8	10.2		0	3		ESE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.34	770.6	30.43	772.9	51.1	10.6	79	SE	20	8.9			10			0.01	0.3	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.89	759.2	55	12.8		SSE			6		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.07	763.8	51	10.6		S			2		10						Robert Burnet.

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

Marine Series. Vessels.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Sea or swell. Height scale 0–9	Direction from—	Weather	Observer.
S. S. Algeria, N. 45° 0′, W. 46° 0′			30.04	763.0	63	17.2		SE			2		10	SE		*15	N	Overcast	Capt. W. Watson.
S. S. Batavia, N. 42° 20′, W. 63° 10′			29.85	758.2	62	16.7		NE			5		10			4	NE	Overcast	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 41° 20′, W. 65° 0′			29.85	758.2	65	18.3		NNE			5		10			5	ENE	Drizzling	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 48° 55′, W. 51° 15′			30.02	762.5	57	13.9		SW			2		2			0		D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
San José	26.24	666.5			68.0	20.0	92	SE			2		9ks;d		SW	0.3	8.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	30.08	764.1	30.13	765.3	57.4	14.1	75	SE			2		0						
Fanöe	30.11	764.7	30.13	765.2	59.4	15.2	67	W			2		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.72	755.0	29.77	756.1	53.1	11.7	87	Calm			0		8						
Thorshavn, (Faröe)	29.99	761.8	30.03	762.7	51.4	10.8	89	S			2		10						Rain and fog
Vestervig	29.93	760.2	30.10	764.5	57.6	14.2	69	WSW			2		4						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.50	749.4	30.06	763.4	64.4	18	81	S			1		5		SW	0.04	1.	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.93	760.2	30.01	762.2	76.6	24.8	42	NNW			2				NW	0	0	Light clouds	Mr. Giraud, Director.
Bar-sur-Seine	29.53	749.2	30.06	763.4	62.8	17.1	73	NE			1		10		SW	0.047	1.2	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.77	756.2	30.06	763.4	64.0	17.8	71	SE			1		10			0	0	Covered	Normal School.
Besançon	29.15	740.4	30.08	762.7	69.1	20.6	78	E			2		0			0	0	Clear.	Normal School.
Bourg-en-Bresse	29.20	741.6	30.13	765.3	70.7	21.5	53	NW			1		0			0	0	Clear	Normal School.
Bourges, Normal School	29.31	740.6	30.05	763.3	67.1	19.5	79	S			1		8		SW	0	0	Very cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.63	752.7	29.85	758.3	64.9	18.3	74	SSW			2		10		SSW	0.482	12.25		The Staff.
Carcassonne, Normal School	29.64	752.8	30.04	763.1	77.4	25.2	56	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.75	755.6	30.07	763.6	60.4	15.8	76	W			1		10k		NW	1.417	36.0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.61	726.7	30.00	761.9	71.6	22.0	49	NE			1		0			0.012	0.3	Clear	Alluard, Director.
Commercy, Normal School	29.20	741.6	30.07	763.8	62.6	17	73	NW			2		5		NW	0.110	2.8	Cloudy	Dr. Goulet, Director
Commune de Gréasque*	28.92	734.6	30.07	763.6	75.2	24.0	39	W			2		2		W	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.81	757.1	30.02	762.4	67.3	19.6	75	SE			6		5		SE	0.004	2.4	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.76	756.0	30.07	763.7	65.8	18.8	77	SSW			2		8		S	0.016	0.40	Very cloudy	Poirrier, Director.
Longs-Le-Saulnier, N. School	29.15	740.4	30.05	763.2	67.1	19.5	68	SW			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	29.91	759.8	30.01	762.3	65.8	18.8	73	SE			4		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.24	742.6	29.90	759.5	67.8	19.9	87	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.00	736.6	30.03	762.7	63.0	17.2	77	S			2		10		SW	0	0	Covered	Normal School.
Nismes, Normal School	29.82	757.3	30.00	762.1	88.7	31.5	61	S			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.82	757.4	30.06	763.4	62.2	16.8	66	W			1		9k		W	0	0	Almost cov'd	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.00	762.1	30.04	762.9	71.6	22.0	67	SW			1		8		SW	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.95	760.8	30.04	763.0	64.8	18.2	59	WNW			1		2		NW	0	0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.00	736.7	30.03	762.7	76.3	24.6	45	E			1		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.3	29.84	758.0	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.00	762.0	72.5	22.5	60	W			3		4			0	0	Partly cl'dy.	The Staff.
Mont-Louis	24.97	634.1	30.28	769.1	59.0	15.0	39	SW	9.3	4.17			4		NW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.77	756.2	30.05	763.2	63.1	17.3	72	WSW			2		10		W	0	0		Marié Davy, Director.
Perpignan			30.04	763.1	75.6	24.2	49	SE	7.4	3.33			5		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.37	542.8			48.0	8.9		N			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.64	575.0			53.6	12.0		N			1		1			0.094	2.4	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.89	759.2	30.06	763.4	63.7	17.6	66	WNW			1		10		WSW	0	0	Covered	E. Renou.
Toulouse, Observatory	29.36	745.8	30.09	764.2	68.9	20.5	53	NNW			1		2			0	0		The Staff.
Versailles, (near Paris)	29.85	758.1	30.04	763.1	65.1	18.4	81	SSW			1		8		NNW	0.008	0.2		C. Marquet.
Zi-Ka-Wei, (near Shanghai)			30.05	763.3	64.4	18.0	67	NW			1		9			0	0	Almost cov.	Dr. A. Bérigny.
	29.83	757.6	29.85	758.3	69.8	21.0	100	Calm	0	0			1k			0	0	Low mist	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 358 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.98	761.5	30.15	765.8	63.5	17.5	42	S			1		0			0	0		Prof. Arndt.
Breslau	29.60	751.8	30.13	765.3	61.0	16.1	53	NNE			1		1			0	0		Royal University Obs'y.
Carlsruhe	29.63	752.7	30.06	763.4	64.4	18.0	78	NE			1		8			0.213	5.4		Albert Senz.
Cassel	29.48	748.9	30.10	764.4	66.6	19.2	55	SSE			4		4	S		0	0		Dr. H. Möhl.
Crefeld	29.85	758.2	30.01	762.3	62.4	16.9	75	SE			3		10			0	0		Director Lose.
Emden	30.02	762.5	30.06	763.4	64.6	18.1	51	E			3		0			0	0		Prof. Prestel.
Frankfort on the Main	29.77	756.1	30.13	765.2	64.4	18.0	62	E			2		9			0.059	1.5		Physical Society.
Friedrichshafen	28.65	727.6	30.05	763.2	66.2	19.0	78	WSW			3		6	NW		0	0		M. Wilhelm.
Hamburg	30.05	763.3	30.12	765.1	61.5	16.4	58	ESE			2		0			0	0		Captain F. Hegemann.
Kiel	30.11	764.7	30.12	765.1	59.2	15.1	72	N			1		3			0	0	Clear	Prof. G. Karsten.
Königsberg, (Prussia)	29.94	760.5	30.01	762.2	59.0	15.0	71	NW			2								Prof. E. Luther.
Köslin			30.13	765.3	61.0	16.1		Calm			0		0			0	0		H. Müller.
Leipsic, Observatory	29.73	755.1	30.15	765.7	63.5	17.5	50	ENE			1		1			0	0		Prof. Bruhns.
Memel, Naval School	29.93	760.2	29.98	761.4	58.3	14.6	64	NW			5		10k						Reinbrecht von Skalweit.
Neufahrwasser	30.04	763.1	30.06	763.5	64.8	18.2	38	NW			3		0			0	0		A. Lothes.
Posen	29.87	758.7	30.16	766.1	62.4	16.9	53	NW			2		0			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.53	750.1	30.07	763.8	66.2	19.0	71	NE			2		5	SW		0.069	1.75		Dr. Schur.
Stuttgart	29.11	739.3	30.04	763.0	63.9	17.7	78	NE			1		8	W		0	0		Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.58	725.9	30.07	763.7	57.7	14.3	87	Calm			0		10	E		0.465	11.8		Dr. Von Bebber.
Wustrow, Naval School	30.18	766.6	30.22	767.6	58.3	14.6	54	N			2		4			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.56	750.7	29.92	760.0	93.6	34.2		SW										Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.60	751.9	29.65	753.2	83.2	28.4	71	WSW	33.0?	14.8?			7			0	0	D. clouds	
Deesa																			
Bombay	29.79	756.6	29.82	757.5	80.5	26.9	87	W	16.0	7.2			10		SW	0.04	1.0	Misty	
Poona	27.76	705.2	29.76	756.6	78.0	25.6	78	SW					10		SW	0.04	1.0	D. clouds	
Lahore	28.76	730.5	29.47	748.6	96.3	35.7	41	E	1.6	0.7			3			0	0		
Belgaum	27.36	694.9	29.92	760.0	71.9	22.2	90	W	9.0	4.0			10		W	0.13	3.3	Showery	
Bangalore																			
Roorkee	28.60	726.3	29.46	748.2	95.0	35.0	48	NW	2.8	1.2			6			0	0		
Agra	29.04	737.6	29.58	751.3	98.7	37.1	69	W								0	0		
Trichinopoly																			
Nagpur	28.66	727.9	29.69	754.1	83.6	28.7	73	Calm	4.5	2.0			9			0	0	D. clouds	
Madras																			
Lucknow	29.13	739.8	29.49	749.0	91.2	32.9	60	WNW	2.4	1.1			10		SW	0	0	D. clouds	
Allahabad	29.22	742.2	29.52	749.9	89.7	32.1	78	Calm	3.0	1.3			4		NW	0.02	0.5	D. clouds	
Patna	29.37	746.0	29.55	750.6	81.3	27.4	89	E	1.4	0.6			10	E	SE	0.32	8.1	Overcast	
Hazaribagh	27.57	700.3	29.58	751.3	74.6	23.7	92	W	11.0	4.9			10		W	0.49	12.4		
Cuttack	29.60	751.7	29.68	753.8	80.0	26.7	86	SSW	12.4	5.5			10			1.60	40.6	Overcast	
Calcutta (Alipore)	29.57	751.1	29.59	751.6	79.7	26.5	88	NNE	10.0	4.5			10		W	0	0	Overcast	
Goalpara	29.21	741.9	29.60	751.7	78.8	26.0	93	E	6.6	3.0			10		S	0.48	12.1	Overcast	
Chittagong	29.62	752.3	29.71	754.7	80.2	26.8	93	S	21.5	9.6			10			0.72	18.3	Raining	
Sibsagar	29.33	745.1	29.67	753.6	77.2	25.1	94	ESE	4.0	1.8			10			1.61	40.9	Overcast	
Rangoon																			
Jubbulpore	28.31	719.1	29.66	753.4	81.9	27.7	75	SW	9.1	4.1			3	SW		0	0	D. clouds	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.27	565.6	29.97	761.1	42.8	6.0	91	NW			2		7	N		0	0		Ab. Dom. Mongini.
Stelvio	22.23	564.6	29.93	760.2	45.9	7.7		NNE			1		4	SSE		0.224	5.7		Signora Ernesta Manfredi.
Udine	29.52	749.7	29.91	759.8	64.8	18.2	74	W	3.8	1.7			9			0.260	6.6		Prof. Giovanni Clodig.
Padua	29.83	757.6	29.93	760.3	63.9	17.7	93	NW	5.6	2.5			10			0.248	6.3		Prof. Dott. Lorenzoni.
Vicenza	29.74	755.4	29.93	760.1	67.6	19.8	76	NNW	1.8	0.8			7	E		0.055	1.4		Conte Alm. Da Schio.
Verona																			Dott. B. Bertoncelli.
Bergamo	28.62	727.0	29.89	759.3	72.0	22.2	58	SW			1		3			1.264	32.1		Prof. Trionfini Carlo.
Domodossola	28.89	733.8	29.88	758.9	71.8	22.1	57	S			6		1			1.161	29.5		Prof. Giuseppe Calza.
Milan	29.41	747.0	29.90	759.5	78.8	26.0	46	N			1		1	NE		0.055	1.4		Ab. Gio. Capelli.
Pavia	29.58	751.4	29.91	759.8	73.4	23.0	52	NW			2		3	NW		0.189	4.8		Prof. Gio. Cantoni.
Moncalieri	29.04	737.5	29.91	759.6	73.8	23.2	50	SSE	2.5	1.1			1			0	0		Prof. P. F. Denza.
Mondovi	28.68	713.1	29.91	759.6	70.2	21.2	43	NW			4		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.73	755.2	29.95	760.7	73.6	23.1	61	ESE			4		2			0	0		Prof. L. Vassallo.
Genoa	29.70	756.0	29.93	760.1	76.8	24.8	54	S	3.8	1.7			2	N		0.165	4.2		Prof. G. M. Garibaldi.
Piacenza	29.67	753.6	29.92	759.9	72.9	22.7	61	Calm	0	0			8			0.126	3.2		Dott. G. Manzi.
Parma	29.60	751.8	29.91	759.6	77.2	25.1	66	NW			2		2			0	0		Prof. P. Pigorini.
Florence	29.72	754.9	29.97	761.1	72.5	22.5	68	W			2		7			0.059	1.5		Cav. F. Meucci.
Leghorn	29.85	758.3	29.94	760.4	74.7	23.7	62	NW	17.4	7.8			6			0	0		Prof. P. Monte.
Siena	28.78	731.1	29.95	760.6	73.2	22.9	53	WNW			6		4	W		0.016	0.4		Prof. L. Toscani.
Urbino	28.40	721.3	29.89	759.2	75.0	23.9	48	SSW			2		10			0	0		Prof. P. Serpieri.
Pesaro	28.88	758.9	29.93	760.1	75.9	23.9	72	N	13.0	5.8			9	SW		0	0		Prof. Luigi Gnidi.
Ancona	29.83	757.6	29.93	760.2	77.0	25.0	52	SE			4		8			0	0		Prof. F. DeBosis.
Grosseto	29.92	759.9	30.02	762.6	70.9	21.6	67	WNW			4		7	S		0	0		Avv. P. Ponticelli.
Rome	29.81	757.1	29.98	761.4	78.6	25.9	59	W	9.4	4.2			10			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.84	757.9	30.03	762.8	79.2	26.2	54	W			2		10	WSW		0	0		Prof. L. Palmieri.
Lecce	29.75	755.7	29.98	761.6	80.4	30.2	44	WSW	23.7	10.6			6			0	0		Prof. C. DeGiorgi.
Cosenza	29.20	741.7	30.04	763.0	84.9	29.4	51	NNE	3.8	1.7			9			0.012	0.3		Prof. F. D. Conti.
Cagliari	29.79	756.7	29.97	761.3	82.0	27.8	47	W			2		5	NW		0.039	1.0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.89	759.2	29.94	760.4	86.0	30.0	64	ESE			2		5	E		0	0		Prof. F. Cafiero.
Palermo	29.74	755.4	29.98	761.5	80.8	27.1	53	W	22.4	10.0			9	W		0	0		Prof. G. Cacciatore.
Caltanissetta	28.10	713.6	29.93	760.2	86.4	30.2	24	S			4		4	E		0	0		Prof. A. Pagani.
Syracuse	29.87	758.8	29.95	760.7	88.5	31.4	56	SE			6		6	WSW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.48	748.9	30.04	763.0	77.0	25.0	67	WNW	2.5	1.1			10	NNW		0.020	0.5		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.83	757.7	29.91	759.7	70	21.1	70	NW	6	2.7		2c				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.16	588.2	30.17	766.2	54.9	12.7	83	Calm	0	0		0	1s			0.19	4.8	Clear	Mariano Bárcena Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	30.03	762.8	30.03	762.8	65.1	18.4		S			2					0	0		
Groningen	30.00	762.1	30.06	763.5	63.5	17.5		E			2					0	0		
Helder	30.04	763.0	30.04	763.0	60.8	16.0		ENE			4					0	0		
Utrecht	30.00	761.9	30.04	763.1	63.7	17.6	68	NE			2		8			0	0	Very cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	30.02	762.4	30.07	763.8	59.7	15.4	77	S	3.4	1.5			0			0	0		
Brönö	30.04	762.9	30.08	763.9	50.0	10.0	64	S	9	4			6			0	0		
Christiania	29.93	760.2	30.08	763.9	59.9	15.5	53	WSW	4	2			1			0	0		
Tromsö	29.85	758.1	29.89	759.2	46.8	8.2	75	SW	4	2			9			0.118	3.0		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.91	759.8	30.10	764.6	67.6	19.8	78	NW	10.5	4.7			1			0.118	3.0		Dr. J. A. Sampaio
Campo Major	29.07	738.4	30.07	763.6	76.3	24.6	55	SE	6.3	2.8			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.04	763.0	30.13	765.2	75.7	24.3	71	SW	11.2	5.0			2			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.71	754.7	30.07	763.6	71.2	21.8	67	SW	15.0	6.7			2			0	0		The Staff.
Ponta Delgada, (Azores)	30.03	762.7	30.10	764.5	73.4	23.0	54	NW	7.4	3.3			6			0.697	17.7		

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

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

RUSSIAN SERIES.

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

Warsaw	29.61	752.1	30.03	762.7	61.2	16.2	46	NNW	9	4			0						Astronomical Obs.
Wilna	29.47	748.5	29.88	759.0	61.2	16.2	59	WNW	7	3			5						Astronomical Obs.
Dorpat	29.53	750.0	29.77	756.2	53.1	11.7	74	NW	7	3			10						Physical Cabinet.
St. Petersburg	29.61	752.0	29.62	752.4	52.2	11.2	85	N	13	6			10						Central Physical Obs
Kuopio	29.43	747.6	29.75	755.7	54.1	12.3	94	N	18	8			8					Raining	Ch. Forsten.
Kieff	29.17	740.9	29.79	756.7	57.6	14.2	54	NW	13	6			3						Physical Cabinet.
Nikolaiev	29.89	759.1	29.96	760.9	70.0	21.1	39	SW	13	6			9						Kurdakof.
Kertch	29.98	761.5	30.00	762.0	69.3	20.7	46	W	4	2			1						Lagorio.
Moscow	28.75	730.3	29.29	744.0	48.4	9.1	91	S	9	4			7						Meteorological Obs.
Lugan	29.51	749.5	29.71	754.6	66.2	19.0	36	WSW	22	10			4						Meteorological Obs.
Archangel	29.60	751.9	29.62	752.4	54.9	12.7	77	E	9	4			10						Ogorodnikof.
Tiflis	28.58	725.9	29.94	760.4	74.7	23.7	46	N	13	6			6						Physical Observatory.
Astrakhan	29.97	761.2	29.89	759.1	67.5	19.7	35	WNW	11	5			8			Blank	Blank		Sebastianof.
Kasan	29.29	743.9	29.56	750.7	50.2	10.1	91	SSE	13	6			10					Light rain	Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.02	737.1	29.96	761.0	52.5	11.4	55	Calm	0	0			9						Meteorological Obs.
Nukuss	29.82	757.4	30.05	763.2	69.4	20.8	51	NNE	2	1			1						
Kasaly																			Bobrof.
Tashkend	28.47	723.0	30.15	765.7	62.1	16.7	71	Calm	0	0			8						Michelson.
Barnaul	28.83	732.3	29.32	744.7	72.0	22.2	48	SW	11	5			9						Meteorological Obs.
Yeniseisk	29.30	744.2	29.45	747.9	53.1	11.7	86	E	9	4			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.71	754.5	29.85	758.1	68.9	20.5	54	Calm	0	0			0						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					59.4	15.2	92	SE	13	6			10						

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.90	708.6			75.4	24.1	55	SW	6.7	3.00		0	7			0	0	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.92	759.8	30.00	761.9	81.6	27.6	81	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.98	761.4	30.07	763.9	80.1	26.7	49	WSW	12.2	5.5		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.91	759.7	82.0	27.8	88	SE				6cs	1k			Inap.	Inap.	Cloudy	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Haparanda	29.85	758.3	29.89	759.3	52.2	11.2	52	N			4		0			0	0		
Umea	29.89	759.3	29.95	760.6	59.4	15.2	49	NE			2		0			0	0		
Hernosand	29.93	760.1	29.98	761.4	57.9	14.4	65	NW			4		3			0	0		
Stockholm	29.82	757.3	29.99	761.8	54.3	12.4	52	NNW			4		10			0	0		
Wisby	29.95	760.6	30.00	762.1	54.3	12.4	74	N			4		0			0	0		
Sub-Series.																			
Upsala	29.94	760.4	30.01	762.3	53.1	11.7	66	NNW	7.2	3.2			10		N	0.004	0.11		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.65	727.6	30.04	762.9	67.1	19.5	57	N			1		1			0.059	1.5	Clear	The Observatory.
Zurich	28.46	722.9	30.06	763.4	66.9	19.4	68	W			1		3			0	0	Bright	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +0.4 mm; Thermometer, +0.5 cent.; Relative Humidity, —4 per cent.

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

TURKISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.91	759.8	82.8	28.2	54	SE	0	0			0			0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.93	760.2	88.3	31.3		S			1		0						B. Stéfanidès.
Valona			30.08	764.0	88.2	31.2		SW			2		5			0	0	Cloudy	A. Bertrand.
Varna			29.80	757.0	78.8	26.0		S			2		10						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.77	756.1	29.89	759.1	87.8	31.0	66	WNW			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B	29.95	760.7	30.02	762.5	59.4	15.2	85	Calm	0	0			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.08	764.0	57	13.9		E	1	0.4			8s		S	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B			30.03	762.7	51	10.6	96	Calm	0	0		5c	Haze	N		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island			30.01	762.2	59	15.0	89	NE	0	0		5k	0	Calm		0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.86	758.4	30.06	763.5	53.2	11.8	96	E			1	10cs	0	W		0	0	Foggy	James Smith, M. A.
Dalhousie, N. B	30.01	762.2	30.04	763.0	55	12.8	80	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.60	751.8	29.64	752.8	51.3	10.7	100	SW				8ck	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.06	763.5	51	10.6	79	SW	9	4.0		5c	5s	W	W	0	0	Clear?	J. McWilliams.
Fredericton, N. B	30.00	762.0	30.07	763.8	52.7	11.5	89	N	2	0.9		0	0			0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba			29.65	753.1	54	12.2	93	S	16	7.2		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.16	740.7	29.93	760.2	60.7	15.9	86	E			2	6k	4n	E		0	0	Threatening	H. J. Strang, M. A.
Granton, Ontario	28.85	732.8	29.92	760.0	60	15.6	82	E			1		10n			Inap.	Inap.	Cloudy	James Grant.
*Halifax, N. S	29.79	756.7	29.92	760.0	61	16.1	76	NE	9	4.0		0	0			Inap.	Inap.	Clear	F. Allison, M. A.
Hamilton, Ontario	29.64	752.8	30.00	762.0	59.9	15.5	86	E			1	8c	0	W		0	0	Clearing	Geo. Dickson, M. A
Heart's Content, N. F	30.01	762.2	30.03	762.7	56	13.3	75	Calm			0	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.75	755.6	30.12	765.0	56	13.3	90	S	1	0.4		10cs	Sm'e	Calm	S	0	0	Cloudy	S. Woods, M. A.
*Montreal, Quebec	29.88	758.9	30.08	764.0	61	16.1	82	Calm	0	0		Haze	Sm'e			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.33	745.0	30.02	762.5	56	13.3	78	E	5	2.2		2k	5ks	E	E	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.26	743.2	30.00	762.0	56.7	13.7	75	Calm			0	10k	0			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.28	743.7	29.95	760.7	61	16.1	88	Calm	0	0		10k	0	SW		0	0	Cloudy	H. Morgan.
Port Hastings, N. S	29.91	759.7	29.96	761.0	60.5	15.8		Calm	0	0						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.30	744.2	29.93	760.2	64	17.8	87	E	7	3.1			10ks		SE	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.78	756.4	30.09	764.3	60	15.6	77	Calm	0	0		0	0			0	0	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.62	752.3	30.08	764.0	59	10.0	96	E	3	1.3			Fog			0	0	Foggy	W. H. McIntyre.
St. John, N. B	29.91	759.7	30.08	764.0	54	12.2	93	N	1	0.4			Fog			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.24	742.7	29.92	760.0	60	15.6	81	SE	4	1.8			10k		S	Inap.	Inap.	Cloudy	K. Stewart.
Stayner, Ontario			29.97	761.2	57	13.9	81	SE	3	1.3			10ks		Calm	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.69	728.7	29.94	760.5	58.0	14.4	86	E	8	3.6			10s			0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.95	760.7	29.98	761.5	61	16.1	82	NE	7	3.1		2ck	8ks		E	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.61	752.1	29.99	761.7	61	16.1	82	E	5	2.2			10n		Calm	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					59.0	15.0	82	SE				10k	10s			0	0	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.91	759.7	30.14	765.5	52	11.1	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Alpena, Michigan	29.28	743.7	29.91	759.7	63	17.2	88	E	3	1.3			10s		E	0	0	Cloudy	
Atlantic City, New Jersey	30.10	764.5	30.12	765.0	64	17.8	72	NW	2	0.9		5c	0	W		0	0	Fair	
Augusta, Georgia	29.84	757.9	30.02	762.5	72	22.2	85	SE	3	1.3			10s		SE	Inap.	Inap.	Cloudy	
Baltimore, Maryland	30.07	763.8	30.12	765.0	59	15.0	76	SE	2	0.9		5c	2s;sm'	Calm	Calm	0	0	Cloudy	
Barnegat, New Jersey	30.09	764.3	30.11	764.8	64	17.8	73	NW	8	3.6		8c	0	W		0	0	Fair	
Bismarck, Dakota	27.94	709.7	29.54	750.3	57	13.9	46	SE	4	1.8		2c	Haze	Calm	Calm	0	0	Clear	
Boise City, Idaho	27.00	685.8	29.50	749.3	60	15.6	54	S	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.95	760.7	30.10	764.5	60	15.6	70	W	7	3.1		0	Sm'e		Calm	0	0	Clear	
Brackettville, Texas	28.81	731.8	29.79	756.7	76	24.4	86	Calm	0	0		8cs	2ks	Calm	Calm	0	0	Cloudy	
Breckenridge, Minnesota	28.82	732.0	29.79	756.7	51	10.6	100	S	7	3.1		0	2ks		Calm	0	0	Fair	
Brownsville, Texas	29.88	758.9	29.94	760.5	80	26.7	82	Calm	0	0		0	Sm'e			0	0	Clear	
Buffalo, New York	29.26	743.2	29.95	760.7	60	15.6	76	E	1	0.4			10s		Calm	0	0	Cloudy	
Burlington, Vermont	29.85	758.2	30.11	764.8	57	13.9	81	Calm	0	0		0	0			0	0	Clear	
Cairo, Illinois	29.39	746.5	29.77	756.1	66	18.9	90	SW	11	4.9			10s		W	1.37	34.8	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.81	681.0	30.31	769.9	65	18.3	39	W				0	0			0	0	Clear	
Campo, California	27.40	696.0	29.97	761.2	54	12.2	62	E	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.02	762.5	30.03	762.7	70	21.1	67	NE	12	5.4		5ck	0	Calm		0	0	Fair	
Cape Henry, Virginia	30.06	763.5	30.08	764.0	69	20.6	65	NE	10	4.5		8ck	0	E		0	0	Fair	
Cape Lookout, N. Carolina	30.08	764.0	30.09	764.3	75	23.9	72	N	12	5.4		5c	0	NW		0	0	Fair	
Cape May, New Jersey	30.09	764.3	30.12	765.0	66	18.9	73	W	6	2.7		10cs	0	W		0	0	Cloudy	
Charleston, South Carolina	30.00	762.0	30.07	763.8	75	23.9	76	NE	6	2.7		8cs	0	W		0	0	Fair	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	54	12.2	23	NW	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.08	738.6	29.74	755.4	62	16.7	100	NE	22	9.8			10n		NE	0.13	3.3	Light rain	
Cincinnati, Ohio	29.08	738.6	29.69	754.1	69	20.6	84	S	13	5.8			10s		S	0.23	5.8	Threatening	
Cleveland, Ohio	29.19	741.4	29.89	759.2	64	17.8	78	SE	8	3.6			10n		SE	Inap.	Inap.	Light rain	
Concho, Texas	28.16	715.3	29.78	756.4	70	21.1	79	N	4	1.8		4c		N		0	0	Clear	
Corsicana, Texas	29.48	748.8	29.93	760.2	69	20.6	84	N	3	1.3		2cs	0	Calm		0	0	Clear	
Davenport, Iowa	29.20	741.7	29.82	757.4	59	15.0	87	N	12	5.4		1c	0	Calm		0.34	8.6	Clear	
Denison, Texas	29.17	740.9	29.94	760.5	69	20.6	70	NW	3	1.3		0	0			0	0	Clear	
Denver, Colorado	24.78	629.4	30.11	764.8	53	11.7	30	S	8	3.6		0	0			0	0	Clear	
Detroit, Michigan	29.16	740.7	29.81	757.2	65	18.3	83	E	9	4.0			10s		E	0.03	0.8	Cloudy	
Dodge City, Kansas	27.28	692.9	29.64	752.8	52	11.1	79	NW	1	0.4		2c	0	NW		0	0	Clear	
Dubuque, Iowa	29.16	740.7	29.83	757.7	61	16.1	82	NE	4	1.8		5cs	0	NE		0.05	1.3	Fair	
Duluth, Minnesota	29.21	741.9	29.86	758.4	62	16.7	88	Calm	0	0			10ks		Calm	0	0	Threatening	
Eagle Pass, Texas	29.16	740.7	29.87	758.7	78	25.6	82	E	3	1.3			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.96	761.0	30.03	762.7	58	14.4	81	NW	4	1.8		0	Haze		Calm	0	0	Clear	
Erie, Pennsylvania	29.19	741.4	29.88	758.9	63	17.2	72	SE	21	9.4			10s			0	0	Cloudy	
Escanaba, Michigan	29.28	743.7	29.91	759.7	53	11.7	93	N	6	2.7			Fog			0	0	Dense fog	
Florence, Arizona	28.59	726.2	30.19	766.8	90	32.2	32	Calm				0	5s		Calm	0	0	Fair	
Fort Bayard, New Mexico	24.15	613.4	30.15	765.8	57	13.9	53	E	5	2.2		0	0			0	0	Clear	
Fort Craig, New Mexico	25.56	649.2			56	13.3	74	NW	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.35	745.5	29.88	758.9	63	17.2	88	NW	2	0.9		0	0			0	0	Clear	
Fort Griffin, Texas	28.70	729.0	29.94	760.5	63	17.2	83	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.73	729.7	29.82	757.4	60	15.6	76	N	6	2.7		0	0			0	0	Clear	
Fort Sully, Dakota	28.12	714.2	29.73	755.1	56	13.3	62	SE	4	1.8		0	0			0	0	Clear	
Galveston, Texas	29.92	760.0	29.96	761.0	83	28.3	83	SW	6	2.7		8c;ck	1ks	W	Calm	0	0	Cloudy	
Grand Haven, Michigan	29.21	741.9	29.84	757.9	62	16.7	88	NE	7	3.1		0	8s		NE	0	0	Cloudy	
Indianapolis, Indiana	28.94	735.1	29.67	753.6	67	19.4	84	SW	9	4.0		2k	2s	SW	SW	0.54	13.7	Clearing	
Indianola, Texas	29.94	760.5	29.96	761.0	83	28.3	83	SW	11	4.9		8k	0	S		0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	29.99	761.7	30.01	762.2	81	27.2	78	E	1	0.4		5c	0	Calm		0	0	Fair	
Keokuk, Iowa	29.13	739.9	29.72	754.9	61	16.1	88	N	10	4.5			10s		Calm	0.31	7.9	Cloudy	
Key West, Florida	29.94	760.5	29.98	761.5	83.0	28.3	76	E	4	1.8		0	2ks		E	0.17	4.3	Threatening	
Kittyhawk, North Carolina	30.08	764.0	30.11	764.8	70	21.1	75	NE	7	3.1		5ck	0	N		0	0	Fair	
Knoxville, Tennessee	28.92	734.6	29.89	759.2	65	18.3	90	Calm	0	0			10ks		S	0	0	Cloudy	
La Crosse, Wisconsin	29.16	740.7	29.87	758.7	59	15.0	87	N	2	0.9		0	0			0.07	1.8	Clear	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	68	20.0	64	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					81	27.2	78	SE	4	1.8		10c	0	Calm		0	0	Cloudy	
Leavenworth, Kansas	29.13	739.9	29.96	761.0	62	16.7	88	N	6	2.7			10s		N	1.06	26.9	Cloudy	
Los Angeles, California	29.59	751.6	29.91	759.7	65	18.3	90	N	2	0.9		0	0			0	0	Clear	
Louisville, Kentucky	29.20	741.7	29.73	755.1	71	21.7	84	S	6	2.7		0	1s		S	0.41	10.4	Clear	
Lynchburg, Virginia	29.40	746.7	30.06	763.5	65	18.3	73	SE	4	1.8			10ks		SE	0	0	Cloudy	
Maricopa Wells, Arizona					78	25.6	65	N				2k	0	SE		0	0	Fair	
Marquette, Michigan	29.20	741.7	29.88	758.9	62	16.7	71	Calm	0	0		0	0			0	0	Clear	
Mason, Texas	28.36	720.3	30.08	764.0	70	21.1	90	NW	2	0.9		2ck	5s	NW	Calm	0	0	Fair	
Memphis, Tennessee	28.52	749.8	29.83	757.7	72	22.2	85	SW	4	1.8		0	0			0.60	15.2	Clear	
Milwaukee, Wisconsin	29.20	741.7	29.86	758.4	64	17.8	89	NE	8	3.6			8s		NE	0	0	Cloudy	
Mobile, Alabama	29.91	759.7	29.96	761.0	81	27.2	78	S	5	2.2		8ck	2s	W	Calm	0	0	Cloudy	
Montgomery, Alabama	29.73	755.1	29.95	760.7	73.5	23.1	93	NE	5	2.2			10s		NE	0.16	4.1	Threatening	
Morgantown, West Virginia	28.99	734.0	29.92	760.0	64	17.8	78	E	2	0.9			10s		SW	0	0	Cloudy	
Mt. Washington, N. H.	23.98	609.1	30.34	770.6	46	7.8	60	Calm	0	0		2c	Haze	NW	Calm	0	0	Clear	
Nashville, Tennessee	29.29	744.0	29.79	756.7	72	22.2	85	S	5	2.2		2cs	0	SW		0.17	4.3	Clear	
New Haven, Connecticut	29.98	761.5	30.09	764.3	63	17.2	78	N	4	1.8		0	Haze		Calm	0	0	Clear	
New London, Connecticut	30.06	763.5	30.11	764.8	62	16.7	66	Calm	0	0		1cs	Haze	W	Calm	0	0	Clear	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	79	26.1	82	NW	5	2.2		4cs	5ks	NE	W	0	0	Cloudy	
Newport, Rhode Island	30.05	763.3	30.10	764.5	61	16.1	83	N	4	1.8		0	0			0	0	Clear	
New York, New York	29.95	760.7	30.12	765.0	64	17.8	78	NW	3	1.3		8c;cs	Fog	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.06	763.5	30.12	765.0	63	17.2	88	SE	1	0.4		5c	0	Calm		0	0	Fair	
North Platte, Nebraska	26.90	685.5	29.51	749.5	52	11.1	82	E	6	2.7		0	0			0	0	Clear	
Olympia, Washington Ter.	29.69	754.1	29.73	755.1	52	11.1	93	S	3	1.3		0	5s		Calm	0.78	19.8	Fair	
Omaha, Nebraska	28.89	731.5	29.86	758.4	56	13.3	100	N	4	1.8			Fog		Calm	0.01	0.3	Foggy	
Oswego, New York	29.76	755.9	30.08	764.0	57	13.9	77	SE	10	4.5			10s		Calm	0	0	Cloudy	
Pembina, Dakota	28.89	733.8	29.70	754.4	52	11.1	86	S	10	4.5		0	0			0	0	Clear	
Philadelphia, Pennsylvania	30.07	763.8	30.12	765.0	62	16.7	61	W	3	1.3		10cs	Fog	NW	Calm	0	0	Cloudy	
Phœnix, Arizona					80	26.7	66	SW				5k	0	SW		0	0	Fair	
Pike's Peak, Colorado	18.05	458.5	30.26	768.6	39	3.9	63	N	5	2.2		0	0			0	0	Clear	
Pioche, Nevada	24.13	612.9	29.90	759.4	59	15.0	18	S	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.13	739.9	29.92	760.0	63	17.2	83	SE	2	0.9			10n		S	0.01	0.3	Light rain	
Port Huron, Michigan	29.22	742.2	29.86	758.4	61	16.1	88	SE	3	1.3			10n		Calm	0.03	0.8	Light rain	
Portland, Maine	30.02	762.5	30.07	763.8	60	15.6	76	NW	2	0.9		1c	Sm'e	Calm		0	0	Clear	
Portland, Oregon	29.76	755.9	29.86	758.4	59	15.0	87	S	4	1.8			8s		Calm	0.06	1.5	Cloudy	
Prescott, Arizona					58	14.4	57	Calm	0	0		0	0			0	0	Clear	
Punta Rassa, Florida	29.98	761.5	30.00	762.0	82	27.8	78	E	6	2.7		0	0			0	0	Clear	
Red Bluff, California	29.46	748.3	29.80	756.9	71	21.7	49	S	2	0.9		0	0			0	0	Clear	
Rochester, New York	29.40	746.7	30.00	762.0	58	14.4	75	S	6	2.7		2c	8s	Calm	S	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.34	745.2	29.89	759.2	61	16.1	94	NW	1	0.4			10n			0.28	7.1	Light rain	
Sacramento, California	29.76	755.9	29.84	757.9	62	16.7	77	S	4	1.8		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.19	741.4	29.74	755.4	65	18.3	84	N	12	5.4			10s		Calm	0.80	20.3	Cloudy	
St. Marks, Florida	29.98	761.5	30.00	762.0	75	23.9	95	Calm	0	0		0	5ks		SE	0.15	3.8	Fair	
St. Paul, Minnesota	29.04	737.6	29.84	757.9	59	15.0	76	SE	1	0.4			Fog		Calm	Inap.	Inap.	Foggy	
St. Paul's Island, Alaska																0	0	Clear	
Salt Lake City, Utah	25.63	651.0	29.96	761.0	60	15.6	24	SW	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.26	743.2	29.81	757.2	79	26.1	86	Calm	0	0		2c	0	Calm		0	0	Clear	
San Diego, California	29.87	758.7	29.94	760.5	63	17.2	88	Calm	0	0		0	0			0	0	Clear	
Sandusky, Ohio	29.18	741.2	29.83	757.7	64	17.8	89	SE	10	4.5			10n		SE	0.12	3.0	Light rain	
Sandy Hook, New Jersey	30.09	764.3	30.11	764.8	62	16.7	77	NW	8	3.6		10c	0	W		0	0	Clear	
San Francisco, California	29.84	757.9	29.91	759.7	59	15.0	94	SW	8	3.6			Fog		Calm	0	0	Foggy	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	50	10.0	86	NE	4	1.8		0	Haze			0	0	Clear	
Savannah, Georgia	29.95	760.7	30.04	763.0	78	25.6	82	SE	4	1.8		2ck	8ks	SW	S	0	0	Cloudy	
Shreveport, Louisiana	29.70	754.4	29.92	760.0	73	22.8	81	W	3	1.3		0	0			0.06	1.5	Clear	
Smithville, North Carolina	30.06	763.5	30.10	764.5	68	20.0	84	N	6	2.7		2c	0	Calm		0	0	Fair	
Springfield, Massachusetts	29.93	760.2	30.06	763.5	59	15.0	70	Calm	0	0		0	0			0	0	Clear	
Stanwix, Arizona					80	26.7	58	SE				0	0			0	0	Clear	
Stockton, Texas					64	17.8	89	Calm	0	0		0	8s		Calm	0	0	Fair	
Thatcher's Island, Mass	30.04	763.0	30.09	764.3	59	15.0	81	N	8	3.6		0	0			0	0	Clear	
Toledo, Ohio	29.14	740.1	29.79	756.7	64	17.8	94	E	6	2.7			10s		E	0.11	2.8	Cloudy	
Tucson, Arizona	27.58	700.5	29.73	755.1	88	31.1	49	Calm	0	0		2c	2s	Calm	S	0	0	Fair	
Tybee Island, Georgia	29.99	761.7	30.02	762.5	80	26.7	78	SE	8	3.6		10ck	0	SE		0	0	Cloudy	
Umatilla, Oregon	29.46	748.3			64	17.8	52	SW	12	5.4			10ks		W	0	0	Cloudy	
Vicksburg, Mississippi	29.68	753.9	29.93	760.2	71	21.7	90	S	5	2.2		2cs	2s	Calm	SW	Inap.	Inap.	Fair	
Virginia City, Montana	24.16	613.6	29.64	752.8	52	11.1	34	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.52	749.8	29.88	758.9	61	16.1	60	S	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.01	762.2	30.12	765.0	58	14.4	87	Calm	0	0		5ck	2s;sm'e	SW	SW	0	0	Smoky	
Wickenburg, Arizona					80	26.7	43	SW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.01	762.2	30.09	764.3	67	19.4	74	NE	6	2.7		0	0			0	0	Clear	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	55	12.8	22	SW	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	30.05	763.3	30.10	764.5	63	17.2	78	N	7	3.1		0	0			0	0	Clear	
Yankton, Dakota	28.64	727.4	29.89	759.2	58	14.4	87	SW	4	1.8		0	2s		SW	Inap.	Inap.	Fair	
Yuma, Arizona	29.73	755.1	29.88	758.9	76	24.4	34	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.34	745.2	29.40	746.7	50.5	10.3	96	SW	10	4.5		1c	0	N		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.91	759.7	29.93	760.2	84	28.9	72	Calm	0	0		2c	0	Calm		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	80	26.7	86	Calm	0	0		5c	2s	SE	Calm	0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.88	758.9	29.96	761.0	82.5	28.1		E			4					0.13	3.3	Clear	F. M. Everett.
St. Thomas, W. I.					82	27.8	91	Calm				5c	0	E		0	0	Clear	G. O. Gellich.
Pt-a-Pitre, Guadeloupe, W. I.	29.83	757.7	29.85	758.2	83	28.3	83	E				2k	5ks		E				L. V. Bigard.
Bridgetown, Barbados, W. I	30.01	762.2	30.03	762.7	84	28.9	75	S	0	0		5ck	5ks	Calm		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.01	762.2	83	28.3	79	E			2	4k	6ks	E		0.710	18.03	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.30	642.6			65.5	18.6	89	Calm			0		10n;s			0.26	6.6	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.09	764.3	30.11	764.8	73.5	23.1		NE			6					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.8 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,627.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.: Omaha, 1,054.6 ft., or 321.4 m.: Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.: Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.90	759.4	63	17.2	60	15.6	94	SW	19	8.5			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.12	765.0			83	28.3	83	W	15	6.7			7		NNE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.13	765.3	64	17.8	57	13.9	81	W			1		0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.84	757.9	74	23.3	74	23.3	61	Calm			0		4s;hz		Calm	0	0			Fair	
Adams, S. 28° 03′, W. 45° 39′	30.26	768.6	72	22.2	70	21.1	90	ENE			4		6		NE	0	0	Long	ENE	D. clouds	
Alert, Yokohama, Japan	30.02†	762.5†	76	24.4	76	24.4	100	W			1		3		W			Smooth		D. clouds	
Alliance, Smyrna Gulf, Turkey	30.07	763.8	86	30.0	86	30.0	61	W			0–1		1		Calm					Clear	
Ashuelot, Che-foo, China	29.92	760.0	77	25.0	74	23.3	81	ENE			2		2		N&E					D. clouds	
Canonicus, New Orleans, La	30.01	762.2	55	12.8	78	25.6	86	NW			2		9							Cloudy	
Colorado, New York, N. Y.	30.15	765.8	65	18.3	65	18.3	78	NW	3	1.3			8		NW	0	0			Dense fog	
Despatch, Constantinople, Turkey	30.08	764.0	80	26.7	78	25.6	73	S			1		1		Calm			Smooth		Clear	
Essex, N. 36° 53′, W. 29° 42′	30.15	765.8	71	21.7	72	22.2	85	NNE			4		9			0	0	Long	N	D. clouds	
Franklin, Norfolk, Va	30.18	766.6	66	18.9	64	17.8	??	Calm	0	0			Fog		Calm	0	0			Foggy	
Frolic, S. 15° 42′, W. 38° 22′	30.36	771.1	78	25.6	79	26.1	86	ESE			4		2k		Calm	Blank	Blank	Moderate.	S&E	D. clouds	
Gettysburg, Naples, Italy	29.88‡	758.9‡			80	26.7	91	WSW			1		9		Calm	Blank	Blank			D. clouds	
Kearsarge, Hong-Kong, China	30.06	763.5			82	27.8	96	Calm			0		4			0	0	Smooth		D. clouds	
Lackawana, Neeah Bay, W. T.																					
Marion, Constantinople, Turkey	29.96	761.0	78	25.6	79	26.1	70	SSE			2		2		Calm	0	0	Smooth		D. clouds	
Michigan, Erie, Pa	29.44	747.8	67	19.4	64	17.8	78	SSE			3		10		S					Cloudy	
Monocacy, Yokohama, Japan	29.82	757.4	65	18.3	75	23.9	61	NW			1				NW	0	0			D. clouds	
New Hampshire, Port Royal, S. C.	30.22	767.6			77	25.0	86	E	5	2.2			10			0	0			D. clouds	
Omaha, Caldera, Chili	30.14	765.5	62	16.7	61	16.1	77	Calm	0	0			2		Calm	0	0	Smooth		Cloudy ?	
Onward, Callao, Peru	30.12†	765.0†	68	20.0	66	18.9	79	ESE			2		10					Long	W	D. clouds	
Ossipee, Norfolk, Va	30.16	766.1	64	17.8	64	17.8	89	Calm			0		9		W					D. clouds	
Palos, Shanghai, China	29.94	760.5	78	25.6	75	23.9	86	Calm			0		0			0	0			Clear	
Plymouth, New York, N. Y.	30.39	771.9	67	19.4	63	17.2	83	NNW			1		6		N&W					Hazy	
Ranger, Nagasaki, Japan	30.08	764.0			76	24.4	86	E			1–2		8		Calm					Pleasant	
Rio Bravo, Brownsville, Texas	29.83	757.7			79	26.1	95	E			1		3		E					D. clouds	
Santee, Annapolis, Md	30.18	766.6	65	18.3	64	17.8	78	Calm			0		8		W	0	0			Cloudy	
St. Louis, League Island, Pa	30.02	762.5	65	18.3	65	18.3	84	NE	2	0.9			6		NE	0	0			Cloudy	
Tennessee, Yokohama, Japan	29.81	757.2	71	21.7	75	23.9	64	NNE	3	1.3			3			0.02	0.5	Smooth		D. clouds	
Trenton, Marseilles, France	30.10†	764.5†	74	23.3	74	23.3	90	NW	11	4.9			5		N&W	0	0			D. clouds	
Vandalia, N. 38° 38′, E. 25° 49′	30.07	763.8	82	27.8	81	27.2	87	SW			1		0							Blue sky	
Wabash, Boston, Mass	30.11	764.8	61	16.1	60	15.6	76	N	5	2.2			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.39†	771.9†	62	16.7	63	17.2		Calm			0		8							D. clouds	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			
Hong Kong, China.					83	28.3		SSE			3		1		SSW			Clear	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
S. S. Oceanic																			Capt. W. H. Kidley.
																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			
N. 41° 37′, W. 61° 40′	W by S		29.75	755.6	78.5	25.8	73	SSE			3		0			Tranq'		Blue sky	Capt. A. Jaeger.
S. S. Ohio																			
Bremerhafen.			30.08	764.0	66.5	19.2	45	SE			1							Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

AMERICAN S. S. CO. MARINE SERIES.

Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

Names of vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
S. S. Illinois, N. 43° 11′, W. 59° 51′			29 66*	753.4*	66	18.9		ENE			6		10		ENE	Moderate.	E	Misty	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Off Frying-Pan-Shoal.	SWby W	4	30.02	762.5	75	23.9	68	NE	8	3.6		2c	2s			Smooth		Clear	Capt. James Jorgenson.

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 11, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:40 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.05	763.3	83.1	28.4	65	N			1		1			0	0	Clear	Michel.
Algiers			30.02	762.6	82.4	28.0	68	NE			2		0			0	0	Clear	Peter.
La Calle			30.07	763.6	78.8	26.0	76	E			4		1			0	0	Clear	Fleury.
Tunis			30.11	764.7	86.0	30.0		NE			3		6			0	0	Fair	Jacques.
Sfax			30.13	765.2	84.2	29.0		E			4		2			0	0	Clear.	Husson.
Saida			30.00	762.1	88.3	31.3		N			4		1			0	0	Clear	Millot.
Tebessa			30.09	764.3	85.1	29.5		N			3		0			0	0	Clear.	Bourgeois.
Geriville			29.99	761.8	89.6	32.0	7	S			4		6			0.236	6.0	Fair	Lemaillot
Laghouat			30.08	764.1	89.6	32.0	38	W			4		2			Inap.	Inap	Clear	François.
Biskra			30.12	765.1	93.7	34.3	37	SE			2		4			0	0	Fair	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Agram	29.58	751.2	30.11	764.8	66.7	19.3	46	NE			2		1			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.38	746.3	30.14	765.6	61.9	16.6	55	W			1		1			0	0		Dr. Wierzbiski.
Eperies	29.18	741.2	30.04	763.1	64.8	18.2	43	N			4		1cs		S	0	0		Julius Mikolik.
Gratz	28.91	734.2	30.14	765.6	63.0	17.2	65	SW			2		0			0	0		Andreas Rosphal.
Hermannstadt	28.60	726.5	30.02	762.4	55.2	12.9	86	NE			1		10			0.181	4.60		Prof. Reissenberger.
Kremsmünster	28.73	729.8	30.06	763.4	60.8	16.0	61	NE			3		0			0	0		Prof. C. Wagner.
Lemberg	29.05	737.9	30.04	762.9	53.6	12.0	80	N			2		10			0	0		Dr. T. Stanecki.
Pola	29.98	761.5	30.09	764.3	73.9	23.3	38	NW			2		0			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin																			
Trieste	29.77	756.2	30.05	763.2	64.0	17.8	69	E			1		4			0.055	1.40		Karl Stancel.
Vienna	30.03	762.8	30.13	765.4	69.8	21.0	57	NW			1		0			Blank	Blank	Clear	P. Busin.
	29.44	747.8	30.12	765.1	67.1	19.5	62	N			1		0			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Arlon	28.51	724.1	29.98	761.4	66.7	19.3	64	S			3		8			0.016	0.4		Royal Observatory.
Brussels	29.72	755.0	29.92	759.9	70.2	21.2	66	S			4	7	1	SSW	S	0.039	1.00	Solar halo	
Furnes	29.86	758.4	29.88	759.0	72.1	22.3	89	SE			2		8			0	0		
Maeseyck	29.84	758.0	29.97	761.3	70.0	21.1	83?	SSW			2		3			0.016	0.4		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.66	753.4	29.75	755.6	57.1	13.9		SSE	18	8.0			7			0.180	4.57	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	29.57	751.1	29.58	751.3	59	15.0		SE			3		9					Raining	William McNeil.
Armagh, Observatory			29.49	749.0	56.6	13.7		SE	10	4.5			10					Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.61	752.1	61.3	16.3		SE	28	12.5			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.43	747.5	64.9	18.3		SSE			3		8					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.32	744.7	29.73	755.1	62.0	16.7		E			1		10					Raining	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29.76	755.9	67.1	19.5		SE			1		10					Overcast	H. Todd.
Cardington			29.78	756.4	67.0	19.4		S			1		10					Overcast	John McLaren.
Chatham, School M. E	29.66	753.4	29.78	756.4	68.2	20.1		SE			3		6					Blue sky	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.26	717.8	29.71	754.6	56.0	13.3		SW			4		5					Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.49	749.0	29.52	749.8	57	13.9		ESE			5		10					Overcast	J. Mac Gowan.
Dover	29.80	756.9	29.82	757.4	66	18.9		SSW			3		5					½ clouded	J. Costello.
Eccles, (near Manchester)			29.66	753.4	62.8	17.1		S	6.0	2.7			10					Showery	Thomas Mackereth.
Falmouth, Observatory	29.42	747.3	29.64	752.8	62.3	16.8		S			5		8					Overcast	The Staff.
Fort Napier, (Natal)	27.95	709.9	30.18	766.6	62.1	16.7		SE			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.00	762.0	84.0	28.9		N			2		5					D. clouds	
Galway, Queen's College			29.57	751.1	58	14.4		S			2		10					Raining	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.00	762.0	30.04	763.0	79.4	26.3		E			1		3					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.46	746.7	29.60	751.8	63.1	17.3		SSE			4		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.85	758.2	29.86	758.4	62	16.7		S			3		3					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.61	752.1	29.78	756.4	67.2	19.6		SSE			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.53	750.0	29.75	755.6	60.5	15.8		SSW			2		8			Blank	Blank	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.67	753.6	61	16.1		SE			7		10n			0.66	16.8	Raining	M. P. Moyle.
Holyhead	29.51	749.5	29.56	750.8	61	16.1		SSE			3		3					Showery	John Tilston.
Jersey	29.51	749.5	29.79	756.7	62.0	16.7		SW			5		8					Showery	J. Fisher.
Kew, Observatory			29.77	756.1	67.4	19.7		S	13	5.8			9					Threatening	The Staff.
Kingstown	29.47	748.5	29.50	749.3	61	16.1		S			3		8					Overcast	George Mitchell.
Leicester, Museum			29.74	755.4	60.4	15.8		S			1		10					Raining	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.93	760.2	30.00	762.0	83.8	28.8		NW			1		0					Blue sky	Corp'l. P. Bravis, A.H.C.
Nairn	29.51	749.5	29.60	751.8	63	17.2		SE			2		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			29.99	761.7	86.5	30.3		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.55	750.6	29.74	755.4	62.3	16.8		SSE			3		10n		SE	0.330	8.38	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.20	741.7	29.71	754.6	60.0	15.6		SSE			3		10					Heavy rain	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.75	755.6	61	16.1		S			1		10					Raining	F. Lucas
Plymouth	29.61	752.1	29.68	753.9	60.4	15.8		S			4		10					Overcast	John Merrifield.
Roche's Point	29.40	746.7	29.44	747.8															W. Kennedy.
Saint Ann's Head	29.41	747.0	29.57	751.1	60	15.6		S			6		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys)			29.72	754.9	56	13.3		SE	30	13.4			6					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.87	758.7	68.4	20.2		N			2		10					Raining	Sergt. W. H. Lyne.
Sheffield	29.50	749.3	29.74	755.4	63.5	17.5		SW			1		10			0.198	5.03	Raining	W. F. Cooper.
Silloth Rectory	29.59	751.6	29.62	752.3	62.2	16.8	76	S			6		10			0.145	3.69	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					61.3	16.3		SE			4		10					Rain & hail	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			29.53	750.0	58	14.4		SE			5		10					Gloomy	John Smith.
Stratfield Turgiss	29.55	750.6	29.76	755.9	63.5	17.5		S			1		10					Overcast	Rev. C. H. Griffith, F.M.S.
Thurso			29.66	753.4	62	16.7		SSE			5		7					D. clouds	John Trotter.
Truro, Royal Institution			29.68	753.9	64	17.8		S			7		8					Gloomy	W. Newcombe.
Valencia, Observatory			29.40	746.7	59.9	15.5		SSE	18	8.0			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		SE			4		10			0.16	4.1		Henry Mercer.
Cape Good Hope, Obs'y	30.24	768.1	30.28	769.1	64.4	18.0	61	SE	9	4.0		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.38	771.6	44.5	6.9	71	Calm			0		0			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.67	753.6	66.0	18.9		S			4		7k			0.16	4.1	Cloudy	Andrew Gibb.
Mauritius, Observatory	30.00	762.0	30.19	766.8	74.1	23.4	66	ESE	19.6	8.8		0	2		ESE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.16	766.1	30.25	768.3	49.1	9.5	72	SE	12	5.4			4			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.48	748.8	56	13.3		SSE			7		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.86	758.4	51	10.6		SE			7	7	5	SE					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.07 m.; Port Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 47° 40′, W. 39° 20′			28.85	758.2	63	17.2		SE			2		10	WNW		*7.5	N	Overcast	Capt. W. Watson.
S. S. Batavia, N. 42° 15′, W. 57° 50′			29.96	761.0	68	20.0		N			5		7			4	NNE	D. clouds	Capt. J. E. Moulund.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 40° 40′, W. 67° 15′			30.15	765.8	59	15.0		NW			1		2			1	ENE	Blue sky	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. O. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorita																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
San José	26.20	665.5			68.0	20.0	98	NE			1	1ck	5s			0.3	8.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	30.07	763.6	30.11	764.8	59.2	15.1	64	SSE			2		0						
Fanöe	29.98	761.6	30.01	762.1	66.0	18.9	58	ESE			4		3						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.43	747.5	29.47	748.6	54.9	12.7	86	SE			2		5						
Thorshavn, (Faröe)	29.65	753.2	29.69	754.1	52.0	11.1	91	SE			4		10						
Vestervig	29.86	758.4	30.03	762.7	60.4	15.8	81	ESE			4		3						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.33	745.0	29.88	759.0	63.5	17.5	65	SW			1		10		SW	0	0	Covered	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.99	761.7	30.07	763.7	81.0	27.2	39	S			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.39	746.5	29.93	760 3	74.1	23.4	49	SW			2	2c				0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.60	751.7	29.87	758.7	70.3	21.3	65	S			2		2		S	0	0	Slightly cl'dy	Normal School.
Besançon	29.13	739.8	30.01	762.2	67.6	19.8	58	N			2		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.21	741.8	30.14	765.6	75.2	24	67	S			4		0			0	0	Clear	Normal School.
Bourges, Normal School	29.39	746.4	29.92	760.0	69.8	21	69	S			3		5		SE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.50	749.3	29.72	754.9	64.9	18.3	72	SW			5		1		SW	0.197	5.00		The Staff.
Carcassonne, Normal School	29.69	754.1	30.10	764.4	79.7	26.5	63	E			2		5		E	0	0	Cloudy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.66	753.3	29.97	761.1	75.2	24.0	60	SE			2	2c		S		0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.63	727.2	29.90	759.5	81.5	27.5	37	W			2		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.13	739.8	29.99	761.7	66.9	19.4	68	SE			4		2		SE	0	0	Slightly cl'dy	Dr. Goulet, Director
Commune de Gréasque*	29.04	737.5	30.18	766 5	80.1	26.7	35	SW			2		2		SW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
Le Roche-sur-Yon, N. School	29.72	754.9	29.93	760 3	64.0	17.8	82	NE			8		8		NE	0.205	5.2	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.58	751.4	29.88	759.0	71.2	21.8	61	SW			4		8		SW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.12	739.7	30.01	762.2	72.9	22.7	63	SW			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	29.78	756.3	29.87	758.8	67.6	19.8	64	SW			5		5		S	0.106	2.7	½ covered	T. Carré, Director.
Mâcon, Normal School	29.29	744.0	29.96	761.0	66.6	19.2	92	W			2		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.93	734.8	29.94	760.5	69.1	20.6	58	S			1		2		S	0	0	Slightly cl'dy	Normal School.
Nismes, Normal School	29.74	755.4	29.93	760.3	89.6	32	50	N			1		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.64	752.9	29.87	758.7	73.9	23.3	54	S			2		23k			0	0	Partly cl'dy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.87	758.6	29.90	759.4	73.4	23.0	54	WSW			6		10		SW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.74	755.3	29.82	757.5	76.5	24.7	49	SE			2		2		S	0	0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	28.95	735.3	29.96	761.0	87.4	30.8	38	W			1		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.08	764.1	80.2	26.8	36	S			1		0			0	0		The Staff.
Mont-Louis	24.98	634.4	30.29	769.4	63.7	17.6	43	SSW	20.5	9.17			1		SE	0	0		Mr. Falguère.
Paris, Montsouris Obs'y																			Dr. A. Niepce.
Perpignan	29.60	751.8	29.87	758.8	75.9	24.4	54	S			3		3		SSW	0	0		Marié Davy, Director.
Pic du Midi, (Summit,) H. P.			30.00	762.1	74.3	23.5	69	NE	5.6	2.50			1		SE	0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P.	21.45	544.6			51.6	10.9		S			1		6					Fair	M. Baylac.
Saint Maur, (near Paris)	22.68	576.0			55.8	13.2		S			1		6			0	0	Fair	Gen'l de Nansouty.
Toulouse, Observatory	29.72	754.9	29.89	759.1	75.7	24.3	50	SSE			3		1	SSW	SW	0	0		E. Renou.
Tours	29.33	744.9	30.05	763.3	77.5	25.3	46	SSE			4		2			0	0		The Staff.
Versailles, (near Paris)	29.69	754.2	29.89	759.2	73.8	23.2	58	SSW			3		10		W	0	0		C. Marquet.
Zi-Ka-Wei, (near Shanghai)			29.89	759.2	76.3	24.6	50	S			4		5			0	0	Fair	Dr. A. Bérigny.
	29.90	759.4	29.92	760.0	71.6	22.0	96	SE	2.5	1.1			8k			0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.95	760.7	30.12	765.0	67.6	19.8	42	S			1		0			0	0		Prof. Arndt.
Breslau	29.65	753.2	30.19	766.8	64.0	17.8	44	N			1		0			0	0		Royal University Obs'y.
Carlsruhe	29.58	751.4	30.00	761.9	70.3	21.3	69	NE			1		5			0	0		Albert Senz.
Cassel	29.47	748.5	30.08	764.0	69.4	20.8	52	SE			2		2	SSW		0	0		Dr. H. Möhl.
Crefeld	29.81	757.1	29.97	761.2	71.6	22.0	62	SE			3		7			0	0		Director Lose.
Emden	29.94	760.4	29.97	761.3	66.9	19.4	74	SSE			3		5	SW		0	0		Prof. Prestel.
Frankfort on the Main	29.74	755.5	30.10	764.6	65.8	18.8	52	ESE			2		2			0	0		Physical Society.
Friedrichshafen	28.65	727.6	30.06	763.5	62.2	16.8	81	W			3		0			0	0		M. Wilhelm.
Hamburg	29.97	761.2	30.04	762.9	67.6	19.8	46	ESE			4		1c			0	0		Captain F. Hegemann.
Kiel	30.02	762.6	30.04	763.1	62.8	17.1	53	SE			2		2			0	0	Clear.	Prof. G. Karsten.
Königsberg, (Prussia)	30.06	763.5	30.13	765.3	57.6	14.2	59	NW			1								Prof. E. Luther.
Köslin			30.18	766.6	61.3	16.3		Calm			0		0			0	0		H. Müller.
Leipsic, Observatory	29.73	755.1	30.14	765.5	67.6	19.8	49	SE			1		0			0	0		Prof. Bruhns.
Memel, Naval School	30.07	763.8	30.12	765.0	56.8	13.8	57	NW			2		9ks						Reinbrecht von Skalweit.
Neufahrwasser	30.17	766.2	30.18	766.6	57.9	14.4	55	NNE			2		1			0	0		A. Lothes.
Posen	29.92	760.0	30.21	767.3	63.3	17.4	52	WNW			3-4		0			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.50	749.2	30.04	763.0	62.6	17.0	87	Calm			0		3	SW		0	0		Dr. Schur.
Stuttgart	29.09	738.9	30.02	762.4	68.0	20.0	67	SE			1		1	S		0	0		Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.59	726.2	30.07	763.7	62.2	16.8	69	S			2		1	ESE		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.15	765.8	30.20	767.1	65.3	18.5	53	SE			2		3			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.44	747.8	29.82	757.3	87.1	30.6		E										Cloudy	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.57	751.0	29.62	752.3	82.9	28.3	77	WSW	33.0?	14.8?			8		WSW	0	0	D. clouds	
Deesa																			
Bombay	29.78	756.4	29.82	757.4	82.7	28.2	85	W	13.0	5.8			5	SW		0.76	19.3	Misty	
Poona	27.76	705.0	29.76	755.9	76.5	24.7	79	SW					10		SW	0.02	0.5	D. clouds	
Lahore	28.73	729.7	29.44	747.8	95.2	35.1	40	NE	1.5	0.7			0			0	0	Blue sky	
Belgaum	27.36	695.1	29.93	760.2	72.0	22.2	90	W	8.0	3.6			8		W	0.12	3.0	Showery	
Bangalore																			
Roorkee	28.68	728.5	29.55	750.5	94.8	34.9	40	NW	3.0	1.3			1			0	0	Hot wind	
Agra	28.97	735.7	29.52	749.7	88.7	31.5	33	SW					5			0	0		
Trichinopoly																			
Nagpur	28.66	728.0	29.70	754.3	80.6	27.0	82	SW	5.1	2.3			9			0	0	Gloomy,	
Madras																			
Lucknow	29.16	740.5	29.52	749.7	91.7	33.2	44	W	4.3	1.9			10			0	0	Overcast	
Allahabad	29.24	742.8	29.54	750.4	90.7	32.6	70	WSW	5.7	2.6			4	NE		0	0	D. clouds	
Patna	29.40	746.8	29.58	751.4	82.5	28.1	86	SE	0.8	0.4			10	E	SE	0.06	1.5	Overcast	
Hazaribagh	27.61	701.4	29.61	752.1	75.6	24.2	93	WNW	14.4	6.4			10		W	3.13	79.5	Rain and fog	
Cuttack	29.60	751.8	29.68	753.8	85.8	29.9	74	SSW	4.8	2.2			8			0	0	D. clouds	
Calcutta (Alipore)	29.59	751.6	29.61	752.1	79.1	26.2	85	NE	6.0	2.7			10		SW	2.62	66.5	Raining	
Goalpara	29.20	741.6	29.59	751.5	76.4	24.7	98	E	11.0	4.9			10			1.17	29.7	Raining	
Chittagong	29.63	752.7	29.72	755.0	79.8	26.3	94	S	11.8	5.3			10			0.40	10.2	Overcast	
Sibsagar	29.36	745.7	29.69	754.2	78.6	25.9	95	E	5.5	2.5			10			0.15	3.8	Overcast	
Rangoon																			
Jubbulpore	28.32	719.3	29.67	753.6	82.9	28.3	75	W	6.4	2.9			2	W		0.01	0.3	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,959 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.39	568.7	30.08	763.9	47.8	8.8	90	NW			2		10			0	0		Ab. Dom. Morgini.
Stelvio	22.29	566.2	30.02	762.5	47.5	8.6		WNW			4		3	S		0.039	1.0		Signora Ernesta Manfredi.
Udine	29.71	754.7	30.11	764.9	68.7	20.4	57	N	0.7	0.3			2			0	0		Prof. Giovanni Clodig.
Padua	30.00	762.0	30.11	764.7	71.1	21.7	55	S	2.5	1.1			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.92	759.9	30.10	764.6	73.9	23.3	55	SSE	2.5	1.1			1			0	0		Conte Alm. Da Schio.
Verona	29.86	758.5	30.08	763.9	72.3	22.4	55	Calm			0		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.83	732.3	30.11	764.7	72.7	22.6	58	S			1		3			0	0		Prof. Trionfini Carlo.
Domodossola	29.09	738.8	30.08	763.9	68.0	20.0	68	S			6		7			0	0		Prof. Giuseppe Calza.
Milan	29.61	752.1	30.11	764.7	79.2	26.2	50	E			2		5	E		0	0		Ab. Gio. Capelli.
Pavia	29.77	756.2	30.11	764.7	73.8	23.2	61	E			2		1	SE		0	0		Prof. Gio. Cantoni.
Moncalieri	29.22	742.1	30.09	764.3	72.7	22.6	60	NNE	1.3	0.6			4			0	0		Prof. P. F. Denza.
Mondovi	28.22	716.9	30.06	763.5	72.1	22.3	44	ENE			4		3	SE		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.88	759.0	30.10	764.5	72.7	22.6	73	E			4		2			0	0		Prof. L. Vassallo.
Genoa	29.94	760.5	30.11	764.7	76.0	24.8	61	SW	3.8	1.7			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.86	758.5	30.11	764.8	74.8	23.8	55						5			0	0		Dott. G. Manzi.
Parma	29.80	756.8	30.10	764.6	77.0	25.0	51	ESE			2		1			0	0		Prof. P. Pigorini.
Florence	29.86	758.4	30.10	764.6	77.9	25.5	41	NE			4		1			0	0		Cav. F. Meucci.
Leghorn	29.98	761.5	30.07	763.6	75.2	24.0	81	WNW	0.7	0.3			3			0	0		Prof. P. Monte.
Siena	28.78	731.1	30.06	763.5	77.2	25.1	44	WSW	0	0			1	N		0	0		Prof. L. Toscani.
Urbino	28.58	726.0	30.10	764.6	72.9	22.7	61	NE			2		1			0	0		Prof. P. Serpieri.
Pesaro	30.10	764.6	30.15	765.8	70.9	21.6	63	N	19.2	8.6			0			0.087	2.2		Prof. Luigi Guidi.
Ancona	30.02	762.4	30.12	765.0	70.9	21.6	45	NW			6		1	S		1.020	25.9		Prof. F. DeBosis.
Grosseto	29.99	761.7	30.10	764.4	82.0	27.8	35	NNE			2		4	SE		0	0		Avv. P. Ponticelli.
Rome	29.88	758.9	30.05	763.2	78.9	26.6	44	NNW	7.4	3.3			0			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.82	757.5	30.02	762.4	81.0	27.2	47	WSW			4		4	SW		0	0		Prof. L. Palmieri.
Lecce	29.77	756.2	30.02	762.4	78.4	25.8	54	NNW	26.2	11.7			7			0	0		Prof. C. DeGiorgi.
Cosenza	29.15	740.3	30.03	761.9	82.6	28.1	56	NNE	4.9	2.2			3	ESE		0.016	0.4		Prof. F. D. Conti.
Cagliari	29.83	757.7	30.02	762.4	81.5	27.5	89	SE			2		3	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.88	758.9	29.93	760.1	83.3	28.5	45	NE			6		6	SE		0	0		Prof. F. Caffero.
Palermo	29.75	755.7	30.00	761.9	78.8	26.0	50	WNW	14.3	6.4			5	NW		0	0		Prof. G. Cacciatore.
Caltanissetta	28.10	713.6	29.95	760.8	79.9	26.6	38	NW			4		6	S		0	0		Prof. A. Pagani.
Syracuse	29.87	758.8	29.95	760.7	80.6	27.0	61	NE			4		5	NNE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.51	749.5	30.07	763.6	78.8	26.0	71	WNW	0.7	0.3			3	W		0	0		Prof. F. Brioschi

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.82	757.4	29.90	759.4	69.2	20.7	97	NW	3	1.3			10n			0.381	9.68	Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.11	587.0	30.10	764.6	59.0	15.0	81	Calm	0	0		0	5k			0.62	15.6	Cloudy	Mariano Bárcena. Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	29.91	759.8	29.91	759.8	68.4	20.2		ESE			3					0	0		
Groningen	29.93	760.2	29.98	761.6	63.9	17.7		S			2					0	0		
Helder	29.93	760.2	29.93	760.2	64.4	18.0		S			2					0.134	3.4		
Utrecht	29.92	760.0	29.97	761.2	66.7	19.3	67	SSE			3		5			0.177	4.5	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.96	761.0	30.02	762.4	58.3	14.6	76	S	1.6	0.7			4			0	0		
Brönö	30.02	762.5	30.06	763.5	51.8	11.0	75	NNW	9	4			4			0	0		
Christiania	29.95	760.7	30.10	764.4	53.4	11.9	78	NW	0	0			10			0	0	Light fog	
Tromsö	29.89	759.2	29.93	760.3	46.6	8.1	83	SW	4	2			10			0	0		

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

PORTUGUESE SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.06	763.5	30.25	768.3	66.6	19.2	68	NW	3.8	1.7			4			0	0		Dr. J. A. Sampaio
Campo Major	29.07	738.4	30.08	764.0	70.3	21.3	75	WNW	8.7	3.9			9	SW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.6	30.15	765.8	78.4	25.8	65	SW	3.8	1.7			7			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.75	755.6	30.10	764.5	71.6	22.0	48	NW	9.8	4.4			9	SW		0.004	0.1		The Staff.
Ponta Delgada, (Azores)	30.19	766.7	30.26	768.5	68.7	20.4	53	N	4.9	2.2			3			0	0		

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

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India N. 38° 32′, W. 11° 43′				30.16	766.1	72.5	22.5	62	W		4		5	W	W	6	W	D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

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

RUSSIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Warsaw	29.70	754.4	30.12	765.0	57.9	14.4	65	NNW	7	3			6						Astronomical Obs.
Wilna	29.61	752.2	30.03	762.7	58.3	14.6	65	WNW	4	2			8						Astronomical Obs.
Dorpat	29.72	754.0	29.96	760.9	57.4	14.1	56	NNW	9	4			1						Physical Cabinet.
St. Petersburg	29.85	758.3	29.87	758.7	53.2	11.8	68	N	11	5			10						Central Physical Obs
Kuopio	29.62	752.3	29.94	760.4	54.0	12.2	93	N	13	6			3						Ch. Forsten.
Kieff	29.23	742.4	29.85	758.2	57.6	14.2	53	NNW	9	4			8						Physical Cabinet.
Nikolaiev	29.87	758.6	29.94	760.4	68.7	20.4	42	NNW	0	0			8						Kurdakof.
Kertch	29.88	759.0	29.90	759.5	69.6	20.9	54	N	4	2			6						Lagorio.
Moscow	29.05	737.8	29.59	751.6	52.5	11.4	82	NW	7	3			6						Meteorological Obs
Lugan	29.51	749.6	29.71	754.7	63.1	17.3	48	WNW	18	8			7						Meteorological Obs
Archangel	29.74	755.5	29.76	756.0	52.3	11.3	83	N	7	3			9						Ogorodnikof.
Tiflis	28.45	722.5	29.78	756.3	81.7	27.6	38	NW	13	6			3						Physical Observatory.
Astrakhan	29.88	759.0	29.77	756.1	69.4	20.9	38	SW	11	5			9						Sebastianof.
Kasan	29.15	739.9	29.40	746.7	52.9	11.6	74	SSW	2	1			9						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	28.77	730.7	29.71	754.5	50.0	10.0	67	SSE	22	10			10					Light rain	Meteorological Obs
Nukuss																			
Kasaly																			Bobrof.
Tashkend	28.41	721.7	30.10	764.6	60.1	15.6	79	Calm	0	0			8						Michelson.
Barnaul	29.50	749.3	30.03	762.7	45.9	7.7	65	SW	2	1			8						Meteorological Obs.
Yeniseisk	29.24	742.8	29.39	746.5	55.8	13.2	88	SW	13	6			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.69	754.0	29.83	757.6	68.4	20.2	49	Calm	0	0			0						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					63.0	17.2	88	SE	18	8			10						

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

SPANISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.87	707.8			77.5	25.3	50	SW	8.2	3.67		1	6	SW		0	0	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.88	759.0	29.96	761.1	82.2	27.9	80	ESE	3.4	1.5		3c	0	SE		0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.97	761.2	30.06	763.6	78.1	25.6	55	WSW	11.2	5.0		3	3	W	W	0	0		Capt. C. Pajazon, R. N., Dir
San Juan de Porto Rico, W. I.			29.94	760.4	82.4	28.0	92	S				3cs	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Haparanda	29.95	760.6	29.98	761.6	52.5	11.4	71	S			2		0			0	0		
Umea	29.98	761.4	30.03	762.7	57.2	14.0	57	NW			2		7			0	0		
Hernosand	30.00	762.0	30.05	763.3	58.6	14.8	68	W			2		1			0	0		
Stockholm	29.90	759.4	30.08	763.9	58.3	14.6	52	Calm			0		2			0	0		
Wisby	29.67	753.6	29.73	755.1	54.7	12.6	75	WNW			4		0			[illegible]	0		
Sub-Series.																			
Upsala	29.99	761.7	30.07	763.6	60.4	15.8	60	WSW	3.6	1.6			1		WNW				Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.66	727.9	30.04	763.1	67.6	19.8	66	Var.					0			0	0	Clear	The Observatory.
Zurich	28.49	722.9	30.07	763.6	64.8	18.2	77	NW			1		2			0	0	Clear	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +0.7 mm; Thermometer, +1.1 cent.; Relative Humidity, +5 per cent.

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

TURKISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.91	759.8	67.6	19.8	92	N	14	6.5			10		N	1.291	32.8		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.88	758.9	83.7	28.7		N			4		10					Thunder-storm	B. Stéfanidès.
Valona			30.08	764.1	77.9	25.5		NW			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			30.00	762.0	59.0	15.0		NE			2		10						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.70	754.4	29.82	757.3	88.2	31.2	67	W			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	29.90	759.4	29.96	761.0	63.9	17.7	78	Calm	0	0			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.08	762.7	66	18.9		SE	1	0.4		2c	0	SE		0	0	Fair	W. R. Bigg.
*Chatham, N. B.			30.09	762.0	57	13.9	95	Calm	0	0		8ck	2s	SW	SW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.03	762.7	61	16.1	88	NW	5	2.2		5cs	0	Calm		0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	29.99	761.7	52.0	11.1	96	SW			1	0	2s			0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	29.97	761.2	30.00	762.0	58	14.4	83	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	29.83	757.7	29.87	758.7	52.3	11.3	93	Calm					10			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.00	762.0	49	9.4	85	SW	17	7.6		0	2s		Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.02	762.5	30.08	764.0	58.8	14.9	79	W	3	1.3		10ck	0			0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba			29.53	750.0	50	15.0	97	S	7	3.1		Haze	Haze	Calm	Calm	0	0	Hazy	James Stewart.
Goderich, Ontario	29.14	740.1	29.91	759.7	64.0	18.3	89	SE			1	3c	7n	E		0	0	Threatening	H. J. Strang, M. A
Granton, Ontario	28.84	732.5	29.90	759.4	63	17.2	94	E			1		10n			0.12	3.0	Cloudy	James Grant.
*Halifax, N. S.	29.91	759.7	30.04	763.0	58	14.4	88	NW	3	1.3		8cs	0			0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.51	749.5	29.92	760.0	64.7	18.2	89	E			1	8c	0	E		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.90	759.4	29.92	760.0	55	12.8	81	NE			2	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.69	754.1	30.04	763.0	68	20.0	73	S	7	3.1		Haze	0	Calm		0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.85	758.2	30.05	763.3	65	18.3	76	S	2	0.9		0	Sm'e			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.29	744.0	29.97	761.2	63	17.2	90	NE	5	2.2		2k	5ks	SE	SE	Inap.	Inap.	Fair	Rev. R Mosley
Peterboro, Ontario	29.25	742.9	29.98	761.5	64.7	18.2	77	Calm			0	2k	0			0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.26	743.2	29.93	760.2	66	18.9	89	E	4	1.8		10k	0	S		0.16	4.1	Cloudy	H. Morgan.
Port Hastings, N. S.	29.98	761.5	30.02	762.5	62.5	16.9		W	3	1.3						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.28	743.7	29.90	759.4	66	18.9	95	E	5	2.2			10n		SE	0.11	2.8	Cloudy	M. Payne.
*Quebec, Quebec	29.74	755.4	30.05	763.3	65	18.3	76	SE	1	0.4		2c	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.55	750.6	30.00	762.0	59	15.0	85	E	3	1.3		5c	0		Calm	0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.93	760.2	30.09	764.3	56	13.3	87	Calm	0	0		5c	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.22	742.2	29.90	759.4	66	18.9	88	SE	4	1.8		2k	0			0	0	Clear	K. Stewart.
Stayner, Ontario			29.93	760.2	64	17.8	91	SE	5	2.2		10k	0	SE		0.03	0.8	Cloudy	R. J. Cole.
Stratford, Ontario	28.66	728.0	29.90	759.4	61.9	16.6	98	SE	6	2.7			10n			0.038	0.97	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.98	761.5	30.01	762.2	64	17.8	76	SW	2	0.9		5ck	0	W		0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.60	751.8	29.97	761.2	64	17.8	88	NE	4	1.8			10ks		SW	0	0		Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					59.6	13.3	87	NE				10k	10s			0.40	10.2	Cloudy	John Delany

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

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

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

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.88	758.9	30.10	764.5	62	16.7	78	Calm	0	0			Haze		Calm	0	0	Dense haze	
Alpena, Michigan	29.28	743.7	29.91	759.7	62	16.7	88	Calm	0	0			10s		E	0	0	Cloudy	
Atlantic City, New Jersey	30.10	764.5	30.12	765.0	68	20.0	84	S	8	3.6			10s		SW	0	0	Threatening	
Augusta, Georgia	29.80	756.9	29.97	761.2	73	22.8	90	SE	1	0.4			10s		SE	0.35	8.9	Cloudy	
Baltimore, Maryland	30.04	763.0	30.09	764.3	68	20.0	84	SE	6	2.7			10n		SE	Inap.	Inap	Light rain	
Barnegat, New Jersey	30.10	764.5	30.12	765.0	67	19.4	84	SE	5	2.2			10n		Calm	Inap.	Inap.	Light rain	
Bismarck, Dakota	27.68	703.1	29.24	742.7	62	16.7	71	S	7	3.1		0	0			0	0	Clear	
Boise City, Idaho	27.08	687.8	29.65	753.1	49	9.4	50	NW	8	3.6			10s		NW	0	0	Cloudy	
Boston, Massachusetts	29.98	761.5	30.13	765.3	67.5	19.7	62	SW	2	0.9		4cs	Sm'e	SW		0	0	Fair	
Brackettville, Texas	28.69	728.7	29.68	753.9	77	25.0	76	E	4	1.8		5cs	5s	Calm	Calm	0	0	Cloudy	
Breckenridge, Minnesota	28.70	729.0	29.66	753.4	58	14.4	93	SE	15	6.7		0	0			0	0	Clear	
Brownsville, Texas	29.80	756.9	29.87	758.7	80	26.7	82	S	8	3.6		10ck	0	Calm		0	0	Cloudy	
Buffalo, New York	29.25	742.9	29.94	760.5	64	17.8	89	S	3	1.3			10s		S	0.03	0.8	Cloudy	
Burlington, Vermont	29.82	757.4	30.07	763.8	65	18.3	68	S	1	0.4		0	0			0	0	Clear	
Cairo, Illinois	29.54	750.3	29.92	760.0	65	18.3	89	SW	4	1.8		5k	0	W		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.78	679.7	30.26	768.6	65	18.3	83	SE					10s		SE	0.06	1.5	Cloudy	
Campo, California																			
Cape Hatteras, N. Carolina	29.97	761.2	29.98	761.5	75	23.9	90	SE	4	1.8		5cs	5s	SW	S	0.01	0.3	Cloudy	
Cape Henry, Virginia	29.99	761.7	30.01	762.2	72	22.2	90	SE	8	3.6			10s		SE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.00	762.0	30.02	762.5	79	26.1	78	Calm	0	0		8ck	0	SW		0	0	Fair	
Cape May, New Jersey	30.07	763.8	30.10	764.5	68	20.0	90	SE	7	3.1			10s		S	Inap.	Inap.	Threatening	
Charleston, South Carolina	29.93	760.2	29.99	761.7	79	26.1	86	S	5	2.2		1cs	0	Calm		0.65	16.5	Clear	
Cheyenne, Wyoming	23.95	608.3	29.89	759.2	45	7.2	60	W	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.16	740.7	29.82	757.4	64	17.8	89	N	8	3.6			10s		N	Inap.	Inap.	Cloudy	
Cincinnati, Ohio	29.14	740.1	29.76	755.9	67	19.4	90	SW	5	2.2			10n		SW	0.70	17.8	Light rain	
Cleveland, Ohio	29.19	741.4	29.88	758.9	66	18.9	84	SE	10	4.5			10s		SE	0.05	1.3	Threatening	
Concho, Texas	27.95	709.9	29.56	750.8	72	22.2	90	SE	4	1.8		0				0	0	Clear	
Corsicana, Texas	29.40	746.7	29.85	758.2	71	21.7	90	N	2	0.9		2k	0	N		0	0	Fair	
Davenport, Iowa	29.28	743.7	29.91	759.7	57	13.9	87	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Denison, Texas	29.11	739.4	29.87	758.7	70	21.1	75	E	6	2.7		0	0			0	0	Clear	
Denver, Colorado	24.68	626.9	30.01	762.2	56	13.3	23	SE	10	4.5		0	0			0	0	Clear	
Detroit, Michigan	29.17	740.9	29.80	756.9	67	19.4	94	E	7	3.1			10s		E	0.11	2.8	Cloudy	
Dodge City, Kansas	27.23	691.6	29.41	747.0	64	17.8	78	SE	2	0.9		0	0			0	0	Clear	
Dubuque, Iowa	29.23	742.4	29.92	760.0	53	11.7	86	N	1	0.4		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.17	740.9	29.83	757.7	57	13.9	100	Calm	6	0			Fog		Calm	0	0	Dense fog	
Eagle Pass, Texas	29.04	737.6	29.74	755.4	78	25.6	77	S	2	0.9			10s		SW	0	0	Cloudy	
Eastport, Maine	30.00	762.0	30.06	763.5	62	16.7	77	SW	4	1.8		8c;ck	Haze	W	Calm	0	0	Fair	
Erie, Pennsylvania	29.20	741.7	29.89	759.2	66	18.9	84	SE	9	4.0			10n		S	0.01	0.3	Light rain	
Escanaba, Michigan	29.30	744.2	29.92	760.0	55	12.8	87	Calm	0	0			Fog			0	0	Foggy	
Florence, Arizona	28.34	719.8	29.94	760.5	85	29.4	61	S					10n		S	0.70	17.8	Light rain	
Fort Bayard, New Mexico	24.05	610.9	30.05	763.3	62	16.7	56	SE	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.45	646.4			57	13.9	57	NW	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.35	745.5	29.87	758.7	62	16.7	88	E	7	3.1		0	0			0	0	Clear	
Fort Griffin, Texas	28.57	725.7	29.79	756.7	68	20.0	90	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.62	726.9	29.68	753.9	65	18.3	90	Calm	0	0		2cs	0	Calm		0	0	Clear	
Fort Sully, Dakota	27.91	708.9	29.47	748.5	64	17.8	67	SE	20	8.9		0	0			0	0	Clear	
Galveston, Texas	29.85	758.2	29.89	759.2	83	28.3	83	S	6	2.7		2ck	5ks	Calm	SW	Inap.	Inap.	Threatening	
Grand Haven, Michigan	29.22	742.2	29.81	757.9	63	17.2	88	NE	8	3.6		0	8s		NE	Inap.	Inap.	Cloudy	
Indianapolis, Indiana	29.05	737.9	29.80	756.9	64	17.8	94	SE	4	1.8		Haze	Hz; fog			0.04	1.0	Hazy	
Indianola, Texas	29.87	758.7	29.90	759.4	79	26.1	86	SW	18	8.0			10ks		S	0.17	4.3	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	29.95	760.7	29.97	761.2	80	26.7	86	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.26	743.2	29.85	758.2	64	17.8	78	Calm	0	0		0	Haze		Calm	0	0	Fair	
Key West, Florida	29.93	760.2	29.96	761.0	85.0	29.4	71	SE	7	3.1		1cs	2ks	E	SE	0.01	0.3	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.05	763.3	73	22.8	95	SE	20	8.9			10n		SE	0.02	0.5	Light rain	
Knoxville, Tennessee	28.93	734.8	29.90	759.4	65	18.3	94	Calm	0	0			10ks		SW	2.65	67.3	Cloudy	
La Crosse, Wisconsin	29.18	741.2	29.90	759.4	55	12.8	87	SW	3	1.3			Fog			0	0	Foggy	
La Mesilla, New Mexico	25.98	659.9	30.13	765.3	69	20.6	56	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					82	27.8	70	SE	6	2.7		10ck	0	SW		0	0	Cloudy	
Leavenworth, Kansas	29.05	737.9	29.88	758.9	54	12.2	93	Calm	0	0			Fog			0	0	Foggy	
Los Angeles, California	29.53	750.0	29.86	758.4	61	16.1	70	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.28	743.7	29.82	757.4	66	18.9	94	SW	7	3.1			10n		W	0.87	22.1	Light rain	
Lynchburg, Virginia	29.35	745.5	30.01	762.2	68	20.0	79	NE	4	1.8			10ks		SW	0.15	3.8	Cloudy	
Maricopa Wells, Arizona					72	22.2	85	NW					10s		E	0.25	6.3	Light rain	
Marquette, Michigan	29.21	741.9	29.88	758.9	70	21.1	52	SW	4	1.8		0	0			0	0	Clear	
Mason, Texas	28.26	717.8	29.95	760.7	72	22.2	90	E	2	0.9		2c	0	SE		0	0	Fair	
Memphis, Tennessee	29.63	752.6	29.94	760.5	68	20.0	94	W	2	0.9			10s		W	0	0	Cloudy	
Milwaukee, Wisconsin	29.24	742.7	29.91	759.7	59	15.0	94	N	8	3.6		0	5s		NE	0.02	0.5	Fair	
Mobile, Alabama	29.91	759.7	29.95	760.7	73	22.8	81	NW	5	2.2		0	0			Inap.	Inap.	Clear	
Montgomery, Alabama	29.72	754.9	29.94	760.5	72.5	22.5	85	Calm	0	0		0	Haze		Calm	0.15	3.8	Clear	
Morgantown, West Virginia	28.88	733.5	29.89	759.2	66	18.9	84	E	2	0.9			10s		SW	0.11	2.8	Cloudy	
Mt. Washington, N. H.	24.00	609.6	30.36	771.1	45	7.2	76	W	13	5.8		5ks	2s	W	W	0	0	Fair	
Nashville, Tennessee	29.40	746.7	29.91	759.7	65	18.3	94	Calm	0	0			10s		W	0.04	1.0	Cloudy	
New Haven, Connecticut	30.02	762.5	30.13	765.3	61	16.1	82	Calm	0	0		5ck	Fog	Calm	Calm	0	0	Fair	
New London, Connecticut	30.10	764.5	30.14	765.5	62	16.7	88	Calm	0	0		6c;cs	1s	E; W	Calm	0	0	Fair	
New Orleans, Louisiana	29.91	759.7	29.96	761.0	75.5	24.2	79	W	1	0.4		1c	1s	W	Calm	0.08	2.0	Fair	
Newport, Rhode Island	30.09	764.3	30.14	765.5	64	17.8	88	Calm	0	0		8c;k	0	SW		0	0	Cloudy	
New York, New York	29.97	761.2	30.15	765.8	64	17.8	78	Calm	0	0			Fog		Calm			Foggy	
Norfolk, Virginia	30.00	762.0	30.06	763.5	71	21.7	95	SE	8	3.6			10n		Calm	Inap.	Inap.	Light rain	
North Platte, Nebraska	26.87	682.5	29.35	745.5	55	12.8	93	SE	8	3.6		0	Fog			0	0	Foggy	
Olympia, Washington Ter.	29.86	758.4	29.90	759.4	51	10.6	93	S	2	0.9			Fog		Calm	0.19	4.8	Foggy	
Omaha, Nebraska	28.77	730.7	29.81	757.2	59	15.0	94	S	4	1.8		5c	0	Calm		0	0	Fair	
Oswego, New York	29.70	754.4	30.01	762.2	66	18.9	68	SE	6	2.7		5cs	0	SW		0	0	Fair	
Pembina, Dakota	28.75	730.2	29.54	750.3	58.5	14.7	99	S	12	5.4		0	5s		Calm	0	0	Fair	
Philadelphia, Pennsylvania	30.07	763.8	30.12	765.0	63	17.2	89	SE	6	2.7			10s		SE	0	0	Cloudy	
Phœnix, Arizona					71	21.7	90	E				0	8s		SE	0.17	4.3	Cloudy	
Pike's Peak, Colorado	17.94	455.7	30.15	765.8	36	2.2	96	SW	15	6.7		0	1s		SW	0	0	Clear	
Pioche, Nevada	23.95	608.3	29.72	754.9	60	15.6	34	S	14	6.3		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.11	739.4	29.89	759.2	68	20.0	74	SE	5	2.2			10s		S	0.16	4.1	Cloudy	
Port Huron, Michigan	29.20	741.7	29.84	757.9	65	18.3	89	E	5	2.2			10ks		E	0.01	0.3	Cloudy	
Portland, Maine	30.04	763.0	30.08	764.0	61	16.1	77	W	3	1.3		5k	Fog	Calm	Calm	0	0	Foggy	
Portland, Oregon	29.90	759.4	30.00	762.0	55	12.8	87	S	4	1.8			8s		Calm	0.48	12.2	Cloudy	
Prescott, Arizona					61	16.1	70	Calm					10s		Calm	0	0	Threatening	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	84	28.9	67	SE	12	5.4		0	0			0	0	Clear	
Red Bluff, California	29.50	749.3	29.85	758.2	60	15.6	39	NW	12	5.4		0	0			0	0	Clear	
Rochester, New York	29.36	745.7	29.96	761.0	64	17.8	83	S	7	3.1		8k	0	SW		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.47	748.5	30.04	763.0	49.5	9.7	93	SE	1	0.4			10s		Calm	0.04	1.0	Cloudy	
Sacramento, California	29.78	756.4	29.87	758.7	54	12.2	67	S	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.32	744.7	29.88	758.9	62	16.7	88	W	6	2.7			Fog		Calm	0.05	1.3	Foggy	
St. Marks, Florida	29.94	760.5	29.9[illegible]	761.0	74	23.3	95	Calm	0	0		0	5ks		SW	0.12	3.0	Fair	
St. Paul, Minnesota	29.01	736.8	29.81	757.2	61	16.1	71	SE	4	1.8		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	23.41	594.6	29.74	755.4	68	20.0	29	SE	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.18	741.2	29.73	755.1	78	25.6	86	E	2	0.9		5c	0	NW		0	0	Fair	
San Diego, California	29.82	757.4	29.89	759.2	66	18.9	94	SE	4	1.8			Fog			0	0	Foggy	
Sandusky, Ohio	29.20	741.7	29.84	757.9	66	18.9	90	SE	4	1.8		4ck	2s	SE	Calm	0.21	5.3	Fair	
Sandy Hook, New Jersey	30.11	764.8	30.13	765.3	66	18.9	79	Calm	0	0		10ck	0	SW		0	0	Cloudy	
San Francisco, California	29.86	758.4	29.92	760.0	55	12.8	74	W	12	5.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.27	591.0	29.81	757.2	52	11.1	72	E	2	0.9		1c	2s	SW	Calm	0	0	Fair	
Savannah, Georgia	29.88	758.9	29.98	761.5	80	26.7	82	SW	5	2.2		1cs	0	SW		2.00	50.8	Clear	
Shreveport, Louisiana	29.69	754.1	29.90	759.4	72	22.2	80	N	2	0.9		0	0			0	0	Clear	
Smithville, North Carolina	29.99	761.7	30.03	762.7	79	26.1	82	S	8	3.6		8cs	0	SW		0	0	Cloudy	
Springfield, Massachusetts	29.94	760.5	30.07	763.8	62	16.7	88	Calm	0	0		2ck	Fog	NW	Calm	0	0	Foggy	
Stanwix, Arizona					84	28.9	58	SE				0	5ks		W	Inap.	Inap.	Fair	
Stockton, Texas					66	18.9	83	Calm	0	0		0	1s		Calm	0	0	Clear	
Thatcher's Island, Mass	30.08	764.0	30.13	765.3	62	16.7	88	SW	8	3.6		5c;ck	2s	SW	SW	0	0	Hazy	
Toledo, Ohio	29.16	740.7	29.81	757.2	65	18.3	94	E	1	0.4		0	8s		E	0	0	Cloudy	
Tucson, Arizona	27.47	697.7	30.02	762.5	74	23.3	90	NE				0	8s		NE	0.99	25.1	Cloudy	
Tybee Island, Georgia	29.94	760.5	29.97	761.2	77	25.0	95	S	4	1.8		2c	0	Calm		1.67	42.4	Clear	
Umatilla, Oregon	29.61	752.1			44	6.7	75	E	4	1.8		0	0			0.03	0.8	Clear	
Vicksburg, Mississippi	29.71	754.6	29.96	761.0	68	20.0	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Virginia City, Montana	24.14	613.1	29.62	752.3	47	8.3	55	E	4	1.8			10s		Calm	0	0	Cloudy	
Visalia, California	29.52	749.8	29.88	758.9	63	17.2	51	NW	4	1.8		0	0			0	0	Clear	
Washington, D. C.	29.97	761.2	30.08	764.0	66.5	19.2	92	S	1	0.4			10n		S	Inap.	Inap.	Light rain	
Wickenburg, Arizona					68	20.0	23	S				2k	0	Calm		0	0	Fair	
Wilmington, N. Carolina	29.94	760.5	30.01	762.2	74	23.3	81	NE	2	0.9		5c	0	W		0	0	Fair	
Winnemucca, Nevada	25.48	647.2	29.84	757.9	46	7.8	47	NE	16	7.2		2k	0	S		0	0	Fair	
Wood's Holl, Mass	30.10	764.5	30.15	765.8	67	19.4	84	SW	2	0.9		0	2s		NW	0	0	Fair	
Yankton, Dakota	28.54	724.9	29.78	756.4	59	15.0	88	S	6	2.7		0	0			0	0	Clear	
Yuma, Arizona	29.64	752.8	29.80	756.9	76	24.4	39	S	7	3.1		8k	0	S		0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.24	742.7	29.29	744.0	49.5	9.7	96	NE	0	0		4k	Fog	NE		0	0	Foggy	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.89	759.2	29.91	759.7	82	27.8	75	NE	1.2	0.5		10c;cs	0	S		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	81	27.2	87	SE	7	3.1		5c	8n	SE		0.50	12.7		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.88	758.9	29.96	761.0	83	28.3		E			4					0.03	0.8	Cloudy	F. M. Everett.
St. Thomas, W. I.					82	27.8	83	NE				2c	2s	NE		0	0	Clear	G. O. Gellich
Pointe-Pitre, Guadeloupe, W. I.	29.87	758.7	29.89	759.2	79	26.1	90	E				10c	2ks	E					L. V. Bigard.
Bridgetown, Barbados, W. I.	30.01	762.2	30.03	762.7	85	29.4	72	NE	0	0		5ck	5ks	Calm		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.06	763.5	82	27.8	83	E			2	3c	6k	E		0.720	18.29	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.23	640.8			66.8	19.3	86	Calm			0	3cs;k	1s			0.31	7.9	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	30.10	764.5	30.12	765.0	73.5	23.1		NE			5					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1,760 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fe, 6,882.2 (?) ft., or 2,097.6 (?) m., Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.51 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer: As reported.* Inches.	Barometer: As reported.* Millimeters.	Barometer: Attached Thermometer. Fahrenheit.	Barometer: Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.90	759.4	58	14.4	57	13.9	63	WNW	23	10.3			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.08	764.0			77	25.0	82	N	6	2.7			3			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.14	765.5	66	18.9	59	15.0	82	SW			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	29.86	758.4	74	23.3	71	21.7	95	Calm			0		10n		S	0.48	12.2			Light rain	
Adams, S. 30° 44′, W. 47° 40′	29.88	758.9	71	21.7	69	20.6	90	NNW			6–7		4		NW	Light	Light	Heavy	NW	Squally	
Alert, Yokohama, Japan	30.00†	762.0†	74	23.3	74	23.3	100	WNW			1		10		NW			Smooth		Raining	
Alliance, Chanak Kalessi, Turkey	30.00	762.0	79	26.1	73	22.8	81	NE			2		8		NE					Cloudy	
Ashuelot, Che-foo, China	30.00	762.0	76	24.4	74	23.3	81	E			1		1							D. clouds	
Canonicus, New Orleans, La.	30.00	762.0	55	12.8	75	23.9	90	Var.			1		6							Cloudy	
Colorado, New York, N. Y.	30.20†	767.1†	65	18.3	65	18.3	78	S	1	0 4			8		S	0.22	5.6			Foggy	
Despatch, Beikos Bay, Bosphorus	30.04	763.0	71	21.7	74	23.3	95	N			2		10		N			Smooth		Rainy	
Essex, N. 38° 19′, W. 28° 08′	30.25	768.3	73	22.8	75	23.9	86	ENE			0–1		3			0	0	Long	N	D. clouds	
Franklin, Norfolk, Va.	30.10	764.5	72	22.2	72	22.2	??	SE	8	3.6					SE	0.1	3.			Cloudy	
Frolic, S. 13° 14′, W. 38° 39′	30.30	769.6	78	25.6	79	26.1	95	ESE			4		5kn		S&E	Heavy	Heavy	Moderate.	S&E	Showery	
Gettysburg, Naples, Italy	29.89‡	759.2‡			81	27.2	96	S			1		4		Calm	0	0			D clouds	
Kearsarge, Hong-Kong, China	29.99	761.7			82	27.8	96	Calm			0		1			0	0	Smooth		D. clouds	
Lackawana, Neeah Bay, W. T.	29.86	758.4			58	14.4	82	S			0–1		10		S&W			Ground	NW	Showery	
Marion, N. 40° 20′, E. 26° 41′	29.89	759.2	74	23.3	74	23.3	72	Calm			0		10		Calm	Heavy	Heavy	Smooth		D. clouds	
Michigan, Erie, Pa.	29.44	747 8	69	20.6	68	20.0	79	S			1		10		SW					Light rain	
Monocacy, Yokohama, Japan	29.83	757.7	73	22.8	72	22.2	90	Calm			0		10							Raining	
New Hampshire, Port Royal, S. C.	30.17	766.3			78	25.6	91	S	9	4.0			2		NW	1.2	30.			D. clouds	
Omaha, Caldera, Chili	30.15	765.8	63	17.2	60	15.6	65	SSE	6	2.7			0			0	0	Smooth		Bright	
Onward, Callao, Peru	30.08†	764.0†	68	20.0	65	18.3	89	SE			2		10					Long	W	D. clouds	
Ossipee, Norfolk, Va.	30.10	764.5	72	22.2	72	22.2	90	SE			2		10		SE					Raining	
Palos, Off Yangtse Light-ship	30.01	762.2	77	25.0	77	25.0	82	ESE			2		1		N&E	0	0			Misty	
Plymouth, New York, N. Y.	30.41	772.4	63	17.2	65	18.3	94	Calm			0		10		W					Cloudy	
Ranger, Nagasaki, Japan	30.05	763.3			72	22.2	90	N			1		10		Calm					Raining	
Rio Bravo, Brownsville, Texas	29.79	756.7			81	27.2	91	S			1		2		Calm					D. clouds	
Santee, Annapolis, Md.	30.16	766.1	69	20.6	68	20.0	90	S			4		10		S					Drizzling	
St. Louis, League Island, Pa	30.00	762.0	66	18.9	64	17.8	94	SE	4	1.8			9		W	0	0			Cloudy	
Tennessee, Yokohama, Japan	29.87	758.7	76	24.4	73	22.8	95	NNW	4	1.8			10			0.80	20.3	Smooth		Raining	
Trenton, Marseilles, France	30.10†	764 5†	79	26.1	79	26.1	78	SW	3	1.3			1		S&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.91	759.7	88	31.1	88	31.1	82	NNW			3–5		4		NNW					Hazy	
Wabash, Boston, Mass.	30.15	765.8	66	18.9	67	19.4	69	W	4	1.8			5		W	0	0			D. clouds	
Wyoming, Washington, D. C.	30.28†	769.1†	70	21.1	68	20.0		S&E			1		10		S&E					Showery	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	CHARACTER.	DIRECTION FROM—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio Hong Kong, China.					85	29.4		SW			4		4		SW			Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
S. S. Oceanic																			Capt. W. H. Kidley.
																			Capt. H. Parsell

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg N. 39° 23′, W. 67° 32′	WSW		30.20	767.1	74.5	23.6	95	N			2		0			Tranq'l		Blue sky	Capt. A. Jaeger.
S. S. Ohio Bremerhafen.			30.00	762.0	73.0	22.8	49	S			1		0		SE			Light clouds	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—Continued.

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

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 45° 31′, W. 54° 27′			29 67*	753.6*	59	15.0		NNE			6		10		NE	Moderate	ENE	Misty	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 32° 25′, W. 79° 22′	W	3	29.93	760.2	81	27.2	83	SSW	8	3.6		2c	2ks		NW	Short		Clear	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 12, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.09	764.3	80.6	27.0	66	N			1		3			0	0	Fair	Michel.
Algiers			30.05	763.3	81.7	27.6	77	N			1		8			0	0	Cloudy	Peter.
La Calle			30.07	763.6	79.9	26.6	78	E			5		3			0	0	Fair	Fleury.
Tunis			30.13	765.2	87.8	31.0		E			3		2			0	0	Clear	Jacques.
Sfax			30.15	765.9	84.2	29.0		E			4		1			0	0	Clear	Husson.
Saida			30.04	762.9	78.8	26.0		N			4		2			0	0	Fair	Millot.
Tebessa			30.10	764.6	86.5	30.3		NW			3		4			0	0	Fair	Bourgeois.
Geriville			30.01	762.2	82.8	28.2	31	S			3		6			0	0	Fair	Lemaillot.
Laghount			30.12	765.1	92.3	33.5	38	SE			3		2			0	0	Clear	François.
Biskra			30.13	765.3	95.7	35.4	32	S			2		8			Inap	Inap.	Cloudy	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.59	751.6	30.13	765.2	72.0	22.2	47	SW			3		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.35	745.5	30.11	764.7	65.1	18.4	52	E			1		0			0	0		Dr. Wierzbiski.
Eperies	29.24	742.6	30.10	764.5	64.8	18.2	52	S			2		6cs			0	0		Julius Mikolik.
Gratz	28.89	733.8	30.11	764.9	66.0	18.9	75	SSW			2		0			0	0		Andreas Rospini.
Hermannstadt	28.71	729.2	30.11	764.8	62.6	17.0	55	NW			3		3			0	0		Prof. Reissenberger.
Kremsmünster	28.74	729.9	30.04	763.0	68.4	20.2	74	NE			1		3			0	0		Prof. C. Wagner.
Lemberg	29.12	739.6	30.10	764.4	60.4	15.8	62	SE			1		2			0	0		Dr. T. Stanecki.
Pola	30.00	762.0	30.11	764.7	74.7	23.7	51	WNW			2		1s			0	0		I.R.HydrographicOffice.
Szathmur																			Johann Tamas, S. J.
Szegedin																			
Trieste	29.86	758.5	30.14	765.5	64.4	18.0	67	Calm			0		0			0	0		Karl Stancel.
Vienna	30.04	763.0	30.14	765.6	70.9	21.6	55	NW			1		0			0	0	Clear.	F. Busin.
	29.40	746.8	30.08	764.0	70.0	21.1	69	Calm			0		0			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.62	726.9	30.10	764.6	63.1	17.3	59	W			1		6			0	0		
Brussels	29.82	757.4	30.02	762.4	64.9	18.3	67	SW			5		9k		SW	0.002	0.05		Royal Observatory.
Furnes	29.95	760.6	29.97	761.2	68.2	20.1	63	SW			6		9			0.201	5.1		
Maeseyck	29.90	759.5	30.03	762.8	68.0	20.0	70	SW			4		2			0.008	0.2		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.26	743.2	29.35	745.5	59.0	15.0		S	22	9.8			5			0.080	2.03	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	29.34	745.2	29.36	745.7	59	15.0		SSW			5		5					D. clouds	William McNeil.
Armagh, Observatory								SSW	19	8.5									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.59	751.6	61.0	16.1		SSW	35	15.6			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			29.54	750.3	59.9	15.5		SW			5		7					Showery	J. Dreyer.
Bradford, Yorkshire	29.21	741.9	29.60	751.8	62.0	16.7		S			2		9			0.29	7.4	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A. [H. C
Cambridge, Observatory			29.82	757.4	68	20.0		SW			4		7			Blank	Blank	D. clouds	H. Todd.
Cardington			29.82	757.4	66.0	18.9		SW			5		8					Overcast	John McLaren.
Chatham, School M. E	29.75	755.6	29.88	758.9	63.2	17.3		SW			3		8					Squally	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.43	722.1	29.88	758.9	57.0	13.9		SW			5		5					Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.38	746.2	29.41	747.0	57	13.9		SW			5		10					Raining	J. Mac Gowan.
Dover	29.92	760.0	29.94	760.5	65	18.3		SW			6		7					Showery	J. Costello.
Eccles, (near Manchester)			29.62	752.3	62.9	17.2		SSW	4.6	2.1			10					Squally	Thomas Mackereth.
Falmouth, Observatory	29.65	753.1	29.87	758.7	62.0	16.7		SW			6		9					Squally	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.85	758.2	74.0	23.3		NW			6		8					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.05	763.3	76.0	24.4		Calm			0		6					Raining	
Galway, Queen's College			29.46	748.3	59	15.0		S			8		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.01	762.2	30.04	763.0	77.2	25.1		SW			4		2					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.14	740.1	29.35	745.5	58.0	14.4		SSW			6		6					D. clouds	D. G. Maclean.
Great Yarmouth	29.83	757.7	29.83	757.7	65	18.3		SW			5		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.71	754.6	29.88	758.9	65.4	18.6		SW			5		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.75	755.6	29.97	761.2	64	17.8		SSW			4		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.87	758.7	64	17.8		SW			6		4ck			0.13	3.3	Fine	M. P. Moyle.
Holyhead	29.54	750.3	29.58	751.3	60	15.6		SW			6		1					Blue sky	John Tilston.
Jersey	29.73	755.1	30.01	762.2	66.5	19.2		SW			6		5					Raining	J. Fisher.
Kew, Observatory			29.88	758.9	63.8	17.7		SW	28	12.5			8s;d					Threatening	The Staff.
Kingstown	29.49	749.0	29.52	749.8	60	15.6		NW			4		3					Blue sky	George Mitchell.
Leicester, Museum			29.75	755.6	63.2	17.3		SW			6		9					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.98	761.5	30.05	763.3	82.0	27.8		SE			1		8					Overcast	Corp'l. P. Bravis, A.H.C.
Nairn	29.16	740.7	29.25	742.9	60	15.6		SW			1		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.06	763.5	88.2	31.2		SE			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.54	750.3	29.72	754.9	66.2	19.0		SSW			5		8k;d		SSW	0.070	1.78	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.22	742.2	29.73	755.1	60.8	16.0		SSW			6		5					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.81	757.2	64	17.8		SSW			6		7c						F. Lucas
Plymouth	29.79	756.7	29.87	758.7	60.8	16.0		SW			5		2					D. clouds	John Merrifield.
Roche's Point	29.60	751.8	29.65	753.1															W. Kennedy.
Saint Ann's Head	29.54	750.3	29.70	754.4	59	15.0		SW			7		7					Squally	John C. Walker.
Sandwick Manse, (Orkneys)			29.26	743.2	56.9	13.8		SSE	26	11.6			7					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.03	762.7	71.4	21.9		N			3		3					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.44	747.8	29.67	753.6	63.4	17.4		SW			4		6			0.017	0.43	Overcast	W. F. Cooper.
Silloth Rectory	29.43	747.5	29.46	748.3	52.6	11.4	96	SW			6		10			0.455	11.56	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					59.7	15.4		S			5		10					Raining	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.16	740.7	56	13.3		SSW			5		10					Raining	John Smith.
Stratfield Turgiss	29.67	753.6	29.88	758.9	63.0	17.2		SW			2		4					Squally	Rev. C. H. Griffith, F.M.S.
Thurso			29.24	742.7	58	14.4		SSW			3		8					Showery	John Trotter.
Truro, Royal Institution			29.88	758.9	66	18.9		SW			7		9					Gloomy	W. Newcombe.
Valencia, Observatory			29.64	752.8	59.5	15.3		SW	35	15.6			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		SW			6		10			0.30	7.6		Henry Mercer.
Cape Good Hope, Obs'y	29.95	760.7	29.99	761.7	65.9	18.8	72	SE	18	8.0		4	5						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.92	760.0	50.0	10.0	87	S			2		10kn			0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.42	747.3	57.8	14.3		SW			4		10k			0.32	8.1	Showery	Andrew Gibb.
Mauritius, Observatory	29.99	761.7	30.18	766.6	75.0	23.9	66	E	18.4	8.2		2	4	Calm	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.84	757.9	29.93	760.2	52.1	11.2	99	SW	4	1.8			10			0.68	17.3	Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.19	741.4	55	12.8		SW			4	5	5	SW		0.3	8.		J. Youngclause.
North Unst, (Shetland Is.)			29.36	745.7	53	11.7		S			7	4	7	SE					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 49° 6′, W. 32° 40′			29.30	744.2	58	14.4		NE		5		10			*7.5	Confused.		Capt. W. Watson.
S. S. Batavia, N. 42° 12′, W. 51° 20′			30.04	763.0	61	16.1		N		4		3			3	N	Blue sky	Capt. J. E. Mouland.
Ship Camperdown																		Capt. A. T. Miller.
Brig Catherine, N. 40° 35′, W. 67° 50′			30.27	768.8	63	17.2		WSW		1		6			0		D. clouds	Capt. Adam Smith.
Barque Celeste																		Capt. D. F. McKechnie.
S. S. Hibernia																		Capt. W. R. Cato
Barque Maroon																		Capt. A. T. Brown.
Ship Mikado																		Capt. C. C. Prehn.
S. S. Seine																		Capt. H. Manning.
Barque Sorata																		Capt. Jas. J. Price.
Schooner Traveller																		Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2			68.9	20.5	91	NE			2		6ck			0.2	5.	Stormy	Federico Maison.

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

DANISH SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.
Copenhagen	29.87	758.7	29.92	759.9	62.6	17.0	85	SW			2		9					
Fanöe	29.85	758.1	29.87	758.6	63.0	17.2	83	SSW			4		10					
Godthaab, (Greenland)																		
Stykkisholm, (Iceland)	29.16	740.7	29.21	741.8	51.6	10.9	93	SE			2		8					
Thorshavn, (Faröe)	29.19	741.3	29.22	742.2	51.6	10.9	98	SE			2		10					Raining
Vestervig	29.65	753.1	29.82	757.4	61.3	16.3	84	S			4		9					

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.56	750.8	30.11	764.8	64.4	18	68	SW			1		2		W	0.04	1.	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bouvarne, Director.
Avignon, Normal School	30.07	763.8	30.15	765.8	71.2	21.8	63	NW			1		8		Calm	0.307	7.8	Very cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.57	751.0	30.12	765.1	68.9	20.5	53	SW			2		5kn		SW	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.79	756.6	30.07	763.7	65.1	18.4	83	SSW			2		8		SW	0.177	4.50	Very cloudy	Normal School.
Besançon	29.34	745.1	30.22	767.6	67.6	19.8	60	S			2		5		SSW	0.098	2.5	Cloudy	Normal School.
Bourg-en-Bresse	29.28	743.6	30.21	767.3	65.7	18.7	90	W			1		10n		N	0	0	Covered	Normal School.
Bourges, Normal School	29.60	751.7	30.13	765.4	67.1	19.5	67	SW			3		2		SW	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.75	755.6	29.97	761.1	64.9	18.3	82	SW			5		8		SW	0	0		The Staff.
Carcassonne, Normal School	29.74	755.3	30.15	765.7	66.9	19.4	83	W			2		10		W	0	0	Covered	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoullé, Director.
Châlons sur-Marne, N. Sch'l	29.81	757.1	30.12	765.0	70.2	21.2	53	S			4		5k		SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.89	731.6	30.13	765.3	66.2	19.0	*77	W			1		10			1.016	25.8	Covered	Alluard, Director.
Commercy, Normal School	29.27	743.5	30.14	765.6	64.4	18	88	W			2		5		W	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.08	738.5	30.22	767.5	79.0	26.1	39	SW			2		8		SW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.92	760.0	30.13	765.3	65.5	18.6	64	NE			6		2		NE	0.08	2.	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.82	757.4	30.12	765.1	67.1	19.5	98	WNW			4		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.28	743.7	30.18	766.5	66.6	19.2	87	S			1		5		SW	0.201	5.1	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.03	762 7	30.13	765.2	67.6	19.8	64	SW			5		8		SW	0.012	0.3	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.39	746.5	30.07	763 6	66 4	19.1	98	NW			6		2			0	0	Slightly cl'dy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.11	739.5	30.15	765.7	63.0	17.2	92	SW			1		8		WSW	0	0	Very cloudy	Normal School
Nismes, Normal School	29.74	755.4	29.93	760.2	88.5	31.4	55	N			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.84	757.9	30.08	763.9	69.8	21.0	56	W			2		6k		WSW	0.094	2.41	Cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.08	764.0	30.11	764.8	73.0	22.8	55	SW			3		5		NW	0	0	⅛ covered	Lt. Decaute, Director.
Rouen, Normal School	29.96	760.9	30.04	763.1	68.7	20.4	53	SW			3		5		SW	0.024	0.6	Cloudy	F. Lucard, Director.
Tarbes, Normal School																			T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.5	29.85	758.2	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.14	765.6	78.3	25.7	46	W			1		9			0	0	Very cloudy	The Staff.
Mont-Louis	25.08	637.0	30.39	772.0	59.7	15.4	65	SW	7.4	3.33			10		SW	0.244	6.2		Mr. Falgnère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.80	756.8	30.07	763.8	70.3	21.3	64	SW			3		5		SW	0.094	2.4		Marié Davy, Director.
Perignan			30.13	765.4	73.4	23.0	63	NE	3.7	1.67			9		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.46	545.0			51.8	11.0		SW			1		6					Rainy	M. Bavlac.
Pic du Midi, (Plantade,) H. P.	22.69	576.1			50.7	10.4		SW			1		6			0.366	9.3	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.92	759.9	30.08	764.1	71 6	22.0	57	SW			3		5		SW	0	0	Cloudy	E. Renou.
Toulouse, Observatory	29.47	748.4	30.19	766.9	63.5	17.5	74	NNE			3		0			0	0		The Staff.
Tours	29.91	759.8	30.11	764.8	68.7	20.4	59	WSW			2		5		W	0.047	1.2		C. Marquet.
Versailles, (near Paris)			30.09	764 2	70 5	21.4	55	SW			3		7			0.213	5.41	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.77	756.1	29.79	756.7	73.6	23.1	99	SE	14.8	6.6			10n			0.535	13.6	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.89	759.2	30.06	763.5	69.8	21.0	59	W			1		6			0	0		Prof. Arndt.
Breslau	29.55	750.6	30.08	764.1	72.7	22.6	34	SSW			3		1			0	0		Royal University Obs'y.
Carlsruhe	29.69	754.2	30.15	765.9	67.8	19.9	75	WSW			1		10			0	0		Albert Senz.
Cassel	29.48	748.9	30.10	764.4	69.8	21.0	65	SSE			2		4	SW		0	0		Dr. H. Möhl.
Crefeld	29.85	758.2	30.01	762.3	70.7	21.5	54	SW			5		6k			0	0		Director Lose.
Emden	29.89	759.3	29.93	760.2	68.0	20.0	66	SW			4		1			0.071	1.8		Prof. Prestel.
Frankfort on the Main	29.70	754.4	30.06	763.4	68.5	20 3	50	SW			3		9			0	0		Physical Society.
Friedrichshafen	28.71	729.1	30.11	764.7	66.6	19.2	78	SW			4		5	W		0.028	0.7		M. Wilhelm.
Hamburg	29.91	759.8	29.98	761.5	67.6	19.8	62	SW			4		3k			0	0	Fair	Captain F. Hegemann.
Kiel	29.93	760.2	29.95	760.6	66.0	18.9	66	SW			3		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.00	762.0	30.07	763.8	64.0	17.8	65	SE			1								Prof. E. Luther.
Köslin			30.01	762.2	60.4	20.8		SE			4		2			0	0		H. Müller.
Leipsic, Observatory	29.68	753.9	30.09	764.3	71.2	21.8	64	NW			2		8	W		0	0		Prof. Bruhns.
Memel, Naval School	30.07	763.8	30.09	764.2	58.3	14.6	60	SSW			2		5c	NW					Reinbrecht von Skalweit.
Neufahrwasser	30.04	763.1	30.06	763.5	65.3	18.5	55	SSW			2		7			0	0		A. Lothes.
Posen	29.81	757.2	30.09	764.3	70.9	21.6	43	S			1		1			Blank	Blank		Dr. Magener.
Strassburg Obs., (in Alsace)	29.60	751.8	30.13	765.4	70.3	21.3	68	NE			1		9	W		0	0		Dr. Schur.
Stuttgart	29.17	740.8	30.10	764.4	68.9	20.5	64	NE			1		7	W		0.169	4.3	Raining	Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.61	726.8	30.07	763.6	71.1	21.7	63	W			1		8	NW		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.01	762.2	30.06	763.5	55.6	13.1	75	SW			3		5			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.69	754.0	30.07	763.7	74.8	23.8		NW										Cloudy	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.64	752.8	29.69	754.1	83.8	28.8	79	SW	27.0?	12.1?			9		SW	0	0	D. clouds	
Deesa																			
Bombay	29.83	757.6	29.87	758.6	83.5	28.6	81	W	13.0	5.8			4		W	0.01	0.3	Misty	
Poona	27.77	705.3	29.76	756.0	78.1	25.6	76	W					2		W	0	0	D. clouds	
Lahore	28.84	732.5	29.56	750.7	94.3	34.6	39	SW	2.7	1.2			0			0	0	Blue sky	
Belgaum	27.40	696.0	29.98	761.4	69.9	21.1	90	W	10.0	4.5			10		W	0.08	2.0	Showery	
Bangalore																			
Roorkee	28.70	729.1	29.57	751.1	95.2	35.1	53	NW	3.2	1.4			5			0	0	Hot wind	
Agra	29.05	738.0	29.60	751.7	97.7	36.5	41	W								0	0		
Trichinopoly																			
Nagpur	28.75	730.1	29.78	756.4	83.4	28.6	64	Calm	5.6	2.5			6			0	0	D. clouds	
Madras																			
Lucknow	29.24	742.8	29.60	752.0	93.1	33.9	45	W	5.6	2.5			7		E	0	0	D. clouds	
Allahabad	29.34	745.3	29.64	753.0	89.6	32.0	70	WSW	5.9	2.6			6			0	0	D. clouds	
Patna	29.48	748.9	29.66	753.4	85.4	29.7	77	S	1.5	0.7			10	E	E	0.05	1.3	Overcast	
Hazaribagh	27.70	703.7	29.71	754.6	77.8	25.4	82	W	14.2	6.4			10			0	0	Raining	
Cuttack	29.68	753.9	29.76	755.9	89.3	31.8	65	W	3.7	1.6			9			0	0	D. clouds	
Calcutta (Alipore)	29.70	754.3	29.72	754.8	81.7	27.6	89	NNE	3.0	1.3			5	W		0	0	D. clouds	
Goalpara	29.26	743.3	29.65	753.2	75.7	24.8	97	E	16.0	7.2			10		E	1.76	14.7	Raining	
Chittagong	29.73	755.1	29.82	757.4	75.8	24.3	95	SE	1.0	0.4			4			0	0		
Sibsagar	29.41	747.0	29.74	755.4	79.9	26.6	91	S	3.8	1.7			10	SW	SW	0.9	2.3	Gloomy	
Rangoon																			
Jubbulpore	28.41	721.6	29.76	756.0	82.9	28.3	64	W	6.1	2.7			8	NW		0	0	D. clouds	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.43	569.8	30.12	765.0	48.9	9.4	93	E			6		9	SE		0	0		Ab. Dom. Mongini.
Stelvio	22.37	568.2	30.10	764.5	51.1	10.6		WNW			1		4	ENE		0	0		Signora Ernesta Manfredi.
Udine	29.70	754.4	30.10	764.6	73.8	23.2	41	Calm	0	0			3			0	0		Prof. Giovanni Clodig.
Padua	30.00	762.1	30.11	764.8	74.1	23.4	56	SSW	2.5	1.1			4			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.91	759.6	30.09	764.3	77.0	25.0	57	SE	2.5	1.1			2	W		0	0		Conte Alm. Da Schio.
Verona	29.89	759.2	30.10	764.6	77.5	25.3	53	Calm			0		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.83	732.2	30.10	764.6	75.2	24.0	60	S			1		4			0	0		Prof. Trionfini Carlo.
Domodossola	29.69	738.9	30.08	764.0	68.0	20.0	63	S			6		8			0	0		Prof. Giuseppe Calza.
Milan	29.61	752.0	30.10	764.6	80.2	26.8	50	ESE			1		2	ESE		0	0		Ab. Gio. Capelli.
Pavia	29.77	756.2	30.11	764.7	76.1	24.5	48	E			2		2	SE		0	0		Prof. Gio. Cantoni.
Moncalieri	29.23	742.4	30.10	764.6	75.2	24.0	51	NNE	2.5	1.1			9	W		0	0		Prof. P. F. Denza.
Mondovi	28.25	717.5	30.08	764.1	73.2	22.9	55	NNW			2		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.91	759.7	30.13	765.2	78.3	25.7	60	SSW			2		7			0	0		Prof. L. Vassallo.
Genoa	30.00	762.0	30.17	766.2	76.1	24.5	67	SW	3.8	1.7			4	W		0	0		Prof. G. M. Garibaldi.
Piacenza	29.87	758.6	30.11	764.8	76.6	24.8	44						5			0	0		Dott. G. Manzi.
Parma	29.78	756.5	30.09	764.3	78.3	25.7	57	NE			4		3			0	0		Prof. P. Pigorini.
Florence	29.86	758.5	30.11	764.7	81.0	27.2	12	NE			2		0			0	0		Cav. F. Meucci.
Leghorn	30.00	761.9	30.08	764.0	76.6	24.8	62	W	3.1	1.4			2			0	0		Prof. P. Monte.
Siena	28.93	734.8	30.09	764.2	78.1	25.6	20	N	0	0			0			0	0		Prof. L. Toscani.
Urbino	28.63	727.2	30.15	765.8	72.1	22.3	56	N			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.10	764.6	30.15	765.8	72.0	22.2	72	NE	6.3	2.8			0			0	0		Prof. Luigi Guidi.
Ancona	30.02	762.5	30.12	765.1	74.1	23.4	61	NW			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.02	762.4	30.12	765.1	79.9	26.6	35	WSW			2		2	S		0	0		Avv. P. Ponticelli.
Rome	29.94	760.5	30.11	764.8	78.8	26.0	53	W	1.8	0.8			2			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.91	759.8	30.11	764.7	82.0	27.8	41	NE			2		1	NW		0	0		Prof. L. Palmieri.
Lecce	29.87	758.8	30.12	765.0	75.2	24.0	51	N	20.6	9.2			0			0	0		Prof. C. DeGiorgi.
Cosenza	29.25	743.0	30.10	764.6	80.2	26.8	42	NNW	1.8	0.8			1	WNW		0	0		Prof. F. D. Conti.
Cagliari	29.85	758.2	30.04	762.9	81.5	27.5	60	SE			4		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.97	761.2	30.02	762.4	80.4	26.9	60	SE			2		4	N		0	0		Prof. F. Caffero.
Palermo	29.80	756.9	30.01	763.1	79.5	26.4	53	NE	8.1	3.6			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.16	715.2	30.02	762.4	78.8	26.0	35	S			2		2	E		0	0		Prof. A. Pagani.
Syracuse	29.98	761.4	30.05	763.3	78.3	25.7	67	ESE			2		3	SW		0.208	6.8		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.59	751.6	30.15	765.7	80.8	27.1	70	WSW	0	0			0			0	0		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.84	757.9	29.92	759.9	69.5	20.8	92	E	2	0.9			8s			0.791	20.10	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Mexico, Central Obs'y	23.11	587.0	30.11	764.7	57.2	14.0	80	Calm	0	0		0	1s			Inap.	Inap.	Fair	Mariano Bárcena Vicente Reyes. Miguel Perez. (Engineers in charge.)

NOTE.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	29.99	761.7	29.99	761.7	67.3	19.6		SW			4					0.268	6.8		
Groningen	29.89	759.2	29.95	760.6	64.6	18.1		WSW			4					0.047	1.2		
Helder	29.90	759.4	29.90	759.4	64.4	18.0		SSW			5					0	0		
Utrecht	29.94	760.5	29.99	761.7	67.5	19.7	66	SSW			4		5			0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.60	751.9	29.66	753.3	62.2	16.8	68	S	16.1	7.2			4			0.236	6.0		
Brönö	29.63	752.6	29.67	753.6	59.0	15.0	52	N	4	2			0			0	0		
Christiania	29.72	754.8	29.86	758.5	53.1	11.7	84	NE	7	3			10					Light rain	
Tromsö	29.78	756.3	29.82	757.4	48.2	9.0	84	Calm	0	0			8			0	0		

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

PORTUGUESE SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.98	761.6	30.17	766.4	70.9	21.6	77	SW	6.3	2.8			6			0	0		Dr. J. A. Sampaio
Campo Major	29.10	739.0	30.09	764.3	75.9	24.4	43	NW	3.1	1.4			2			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.12	765.0	30.21	767.2	75.6	24.2	66	SE	8.7	3.9			7			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.79	756.7	30.14	765.6	71.8	22.1	37	NNW	17.4	7.8			0			0	0		The Staff.
Ponta Delgada, (Azores)	30.16	766.0	30.23	767.8	73.4	23.0	60	SSW	4.9	2.2			6			0	0		

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

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India N. 38° 24′, W. 15° 06′				30.28	769.2	71.6	22.0	66	NNW			1		7	N	N	6	NW	D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

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

RUSSIAN SERIES.

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

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Warsaw	29.69	754.2	30.11	764.7	64.2	17.9	57	S	2	1			5						Astronomical Obs.
Wilna	29.71	754.6	30.12	765.1	58.3	14.6	64	W	2	1			8						Astronomical Obs.
Dorpat	29.82	757.5	30.06	763.5	57.7	14.3	55	WNW	4	2			0						Physical Cabinet.
St. Petersburg	29.99	761.7	30.00	762.1	55.2	12.9	67	WNW	11	5			2						Central Physical Obs.
Kuopio	29.60	751.9	29.92	759.9	56.8	13.8	74	W	7	3			10						Ch. Forsten.
Zieff	29.37	746.1	30.00	762.0	58.5	14.7	52	NW	13	6			9						Physical Cabinet.
Nikolaiev	29.97	761.3	30.04	763.1	64.8	18.2	43	NW	9	4			9						Kurdakof.
Kertch	29.94	760.5	29.96	761.0	65.8	18.8	50	NW	7	3			7						Lagorio.
Moscow	29.32	744.8	29.87	758.7	52.9	11.6	73	NW	9	4			8						Meteorological Obs.
Lugan	29.58	751.4	29.78	756.5	56.8	13.8	68	NW	9	4			9			Blank	Blank		Meteorological Obs.
Archangel	29.78	756.5	29.80	757.0	49.8	9.9	74	NW	13	6			8						Ogorodnikof.
Tiflis	28.35	720.1	29.73	755.1	66.4	19.1	87	Calm	0	0			10						Physical Observatory.
Astrakhan	29.89	759.1	29.80	757.0	60.4	15.8	68	Calm	0	0			10			Blank	Blank		Sebastianof.
Kasan	29.26	743.2	29.52	749.9	54.9	12.7	73	NNW	4	2			7						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	28.60	726.4	29.53	750.0	49.3	9.6	81	Calm	0	0			9						Meteorological Obs.
Nukuss	29.52	749.7	29.74	755.4	79.3	26.3	30	SE	7	3			0						
Kasaly	28.34	719.7	29.99	761.7	70.9	21.5	77	Calm	0	0			0						Bobrof.
Tashkend	29.66	753.3	30.18	766.6	50.4	10.2	60	Calm	0	0			9						Michelson.
Barnaul	29.80	757.0	29.95	760.7	44.4	6.9	90	SW	9	4			10			Blank	Blank		Meteorological Obs.
Yeniseisk																			Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.70	754.3	29.84	757.9	72.7	22.6	69	Calm	0	0			6						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock													10						
Nikolaievsk, on the Amoor					62.6	17.0	85	SE	11	5									

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

SPANISH SERIES.

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

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.88	708.0			81.3	27.4	46	SE	3.7	1.67		2	3	SW		0	0	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.4	30.02	762.5	81.4	27.4	82	SSE	2.9	1.3		0	10k;n			0.185	4.7	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.02	762.4	30.11	764.8	74.7	23.7	67	W	11.5	5.1		3	4	WSW	WSW	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.93	760.3	83.8	28.8	86	S				2c	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.67	758.8	29.91	759.8	49.6	9.8	90	E			2		10			0	0		
Umea	29.87	758.8	29.93	760.1	54.9	12.7	74	SW			4		1			0	0		
Hernosand	29.83	757.7	29.88	759.0	55.8	13.2	82	SW			2		7			0	0		
Stockholm	29.78	756.5	29.96	761.0	59.4	15.2	57	SSW			4		5			0	0		
Wisby	29.97	761.1	30.02	762.6	58.6	14.8	66	SW			6		7			0	0		
Sub-Series.																			
Upsala	29.86	758.4	29.93	760.3	59.2	15.1	63	SSW	14.1	6.3			9			0.000	0.01		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.74	730.0	30.12	765.0	71.6	22.0	70	Var.					10			0	0	Covered	The Observatory.
Zurich	28.52	724.5	30.11	764.7	71.4	21.9	67	NW			1		3			0.102	2.6	Bright	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +2.8 mm; Thermometer, +3.4 cent.; Relative Humidity, +8 per cent.

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

TURKISH SERIES.

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

Constantinople			30.09	764.2	67.1	19.5	51	N	27	12.0			6		N	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.19	766.7	76.8	24.9		SE			1		2						B. Stéfanidès.
Valona			30.14	765.6	77.7	25.4		NW			2		0			0	0	Clear	A. Bertrand.
Varna			30.00	762.0	66.2	19.0		NW			2		5						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.64	752.8	29.76	755.8	91.9	33.3	55	SSW			4		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B	29.93	760.2	30.00	762.0	78.3	25.7	71	SW	6	2.7			5			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.14	765.5	71	21.7		SW	1	0.4			8s		SW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B			30.06	763.5	61	16.1	84	SW	6	2.7		0	0			0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island			30.06	763.5	65	18.3	77	Calm	0	0		0	0			0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.93	760.2	30.11	764.8	65.4	18.6	89	SW			1	4cs	0	SW		0	0	Fair	James Smith, M. A.
Dalhousie, N. B	29.94	760.5	29.97	761.2	67.3	19.6	74	W			2					0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.97	761.2	30.01	762.2	46.3	7.9	100	Calm				0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.05	763.3	59	15.0	73	SW	24	10.7		0	Haze		Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.09	764.3	30.15	765.8	62.3	16.8	77	NW	7	3.1		0	0			0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba			29.89	759.2	60	10.0	93	N	4	1.8		2c	2s	N	N	0	0	Fair	James Stewart.
Goderich, Ontario	29.24	742.7	30.01	762.2	67.9	19.9	86	SE			2	2k	1s	S		0	0	Fair	H. J. Strang, M. A
Granton, Ontario	28.97	735.8	30.04	763.0	64	17.8	100	SE			1		10n			0.13	3.3	Cloudy	James Grant.
*Halifax, N. S	29.96	761.0	30.09	764.3	67	19.4	74	NW	5	2.2		0	0			0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.65	753.1	30.01	762.2	62.7	17.1	89	SE			1	6c	0	E		0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.84	757.9	29.86	758.4	60	15.6	73	SW			2	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.82	757.4	30.18	766.6	68	20.0	87	S	3	1.3		5k	2ks	S	NE	0	0	Cloudy	S. Woods, M. A.
*Montreal, Quebec	29.95	760.7	30.15	765.8	68	20.0	82	SW	4	1.8		Haze	5ks			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.38	746.2	30.06	763.5	64	17.8	94	S	8	3.6		0	0			Inap.	Inap.	Clear	Rev. R. Mosley
Peterboro, Ontario	29.38	746.2	30.11	764.8	64.7	18.2	94	SW			1	10k	0			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.40	746.7	30.07	763.8	68	20.0	90	S	2	0.9		5k	0	S		0	0	Fair	H. Morgan.
Port Hastings, N. S	30.00	762.0	30.05	763.3	67.5	19.7		Calm	0	0						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.42	747.3	30.05	763.3	65	18.3	98	SE	2	0.9		5k	0	SW		0.01	0.3	Fair	M. Payne.
*Quebec, Quebec	29.83	757.7	30.15	765.8	65	18.3	78	SE	4	1.8		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.65	753.1	30.10	764.5	57	13.9	98	Calm	0	0			8s		NW	0	0	Fair	W. H. McIntyre.
St. John, N. B	30.01	762.2	30.17	766.3	56	13.3	87	Calm	0	0		0	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.34	745.2	30.01	762.2	66	18.9	87	S	5	2.2		0	Sm'e			0	0	Clear	K. Stewart.
Stayner, Ontario			30.06	763.5	62	16.7	94	SE	5	2.2		5ck	0	SE		0	0	Fair	R. J. Cole.
Stratford, Ontario	28.79	731.3	30.04	763.0	61.9	16.6	99	SE	3	1.3			Fog			0.070	1.78	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.00	762.0	30.03	762.7	70	21.1	71	W	4	1.8		0	0			0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.72	754.9	30.10	764.5	66	18.9	91	E	4	1.8		2k	0	SW		0	0	Clear	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					62.0	16.7	83	W				0	0			0	0	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.96	761.0	30.18	766.6	67	19.4	73	Calm	0	0		0	0			0	0	Clear	
Alpena, Michigan	29.36	745.7	29.99	761.7	64	17.8	94	E	1	0.4			10s		S	0	0	Cloudy	
Atlantic City, New Jersey	30.18	766.6	30.20	767.1	69	20.6	90	SE	12	5.4			10s		W	Inap.	Inap.	Cloudy	
Augusta, Georgia	29.90	759.4	30.08	764.0	73	22.8	90	SE	2	0.9			10s		SE	0.04	1.0	Cloudy	
Baltimore, Maryland	30.13	765.3	30.18	766.6	68	20.0	94	SE	4	1.8			10n		SE	0.39	9.9	Light rain	
Barnegat, New Jersey	30.19	766.8	30.21	767.3	70	21.1	84	SE	8	3.6		8ck	0	SW		Inap.	Inap.	Fair	
Bismarck, Dakota	28.09	713.5	29.74	755.4	55	12.8	55	N	10	4.5		8ck	Haze	W	Calm	0	0	Fair	
Boise City, Idaho	26.94	684.3	29.48	748.8	49	9.4	71	Calm	0	0			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	30.05	763.3	30.20	767.1	65	18.3	78	W	7	3.1		5cs	Sm'e	Calm		0	0	Fair	
Brackettville, Texas	28.71	729.2	29.72	754.9	74	23.3	90	SE	6	2.7			10s		S	1.42	36.1	Cloudy	
Breckenridge, Minnesota	28.77	730.7	29.74	755.4	55	12.8	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Brownsville, Texas	29.81	757.2	29.87	758.7	81	27.2	82	Calm				2c	0	Calm		0	0	Clear	
Buffalo, New York	29.38	746.2	30.06	763.5	69	20.6	79	SW	4	1.8		2k	1s	SW	SW	0	0	Fair	
Burlington, Vermont	29.92	760.0	30.17	766.3	67	19.4	74	S	6	2.7		2c	0	S		0	0	Fair	
Cairo, Illinois	29.67	753.6	30.05	763.3	68	20.0	84	Calm	0	0		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.56	674.6	30.06	763.5	67	19.4	90	SE					10s		S	0.24	6.1	Threatening	
Campo, California																			
Cape Hatteras, N. Carolina	30.06	763.5	30.07	763.8	75	23.9	90	E	3	1.3		5k	5s	SW	SW	Inap.	Inap.	Cloudy	
Cape Henry, Virginia	30.10	764.5	30.13	765.3	74	23.3	90	SE	4	1.8			10s		SE	0.36	9.1	Cloudy	
Cape Lookout, N. Carolina	30.11	764.8	30.12	765.0	77	25.0	90	SE	2	0.9			10s		SW	0	0	Cloudy	
Cape May, New Jersey	30.15	765.8	30.18	766.6	70	21.1	84	E	10	4.5			10s		SW	0	0	Cloudy	
Charleston, South Carolina	30.03	762.7	30.09	764.3	80	26.7	82	S	2	0.9		1cs	0	Calm		0.12	3.0	Clear	
Cheyenne, Wyoming	23.88	606.5	29.82	757.4	53	11.7	48	N	8	3.6		5ck	2s	SW	Calm	0	0	Fair	
Chicago, Illinois	29.28	743.7	29.95	760.7	64	17.8	94	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.34	745.2	29.96	761.0	66	18.9	90	SE	3	1.3		2cs	Fog	SE	Calm	0.20	5.1	Foggy	
Cleveland, Ohio	29.34	745.2	30.05	763.3	66	18.9	84	SE	8	3.6			10s		SE	0	0	Cloudy	
Concho, Texas	27.94	709.7	29.55	750.6	72	22.2	75	SE	20	8.9		8cs		SE		0.87	22.1	Cloudy	
Corsicana, Texas	29.46	748.3	29.90	759.4	72	22.2	95	SE	6	2.7			10s		Calm	0.01	0.3	Cloudy	
Davenport, Iowa	29.36	745.7	29.98	761.5	60	15.6	82	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Denison, Texas	29.12	739.6	29.88	758.9	73	22.8	95	SE	7	3.1		0	0			0.39	9.9	Clear	
Denver, Colorado	24.59	624.6	29.81	757.2	58	14.4	37	S	2	0.9		0	5s		Calm	0	0	Fair	
Detroit, Michigan	29.34	745.2	29.98	761.5	67	19.4	90	S	2	0.9		5cs	Fog	SW	Calm	Inap.	Inap.	Fair	
Dodge City, Kansas	27.20	690.9	29.35	745.5	70	21.1	79	SE	14	6.3		2c	0	S		0	0	Clear	
Dubuque, Iowa	29.28	743.7	29.97	761.2	56	13.3	93	S	1	0.4			Fog		Calm	0	0	Foggy	
Duluth, Minnesota	29.17	740.9	29.82	757.4	62	16.7	77	NW	1	0.4			8s		SW	0	0	Threatening	
Eagle Pass, Texas	29.06	738.1	29.76	755.9	76	24.4	86	Calm	0	0			10s		Calm	0.05	1.3	Cloudy	
Eastport, Maine	30.07	763.8	30.14	765.5	59	15.0	81	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Erie, Pennsylvania	29.31	745.2	30.03	762.7	69	20.6	79	S	14	6.3		2ck	2s	SW		0.04	1.0	Fair	
Escanaba, Michigan	29.32	744.7	29.95	760.7	57	13.9	87	Calm	0	0			Fog		Calm	0	0	Dense fog	
Florence, Arizona	28.20	716.3	29.80	756.9	85	29.4	44	SE				5k	0	SE		0.05	1.3	Fair	
Fort Bayard, New Mexico	23.98	609.1	29.98	761.5	57	13.9	75	SE	3	1.3		5cs	0	W		0	0	Fair	
Fort Craig, New Mexico	25.38	644.6			62	16.7	66	S	4	1.8		0	5s		S	Inap.	Inap.	Fair	
Fort Gibson, Indian Ter.	29.36	745.7	29.87	758.7	72	22.2	75	SE	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.60	726.4	29.82	757.4	70	21.1	85	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.65	727.7	29.70	754.4	73	22.8	85	S	4	1.8		0	0			0	0	Clear	
Fort Sully, Dakota	28.11	714.0	29.70	754.4	61	16.1	66	NE	16	7.2		0	Sm'e			0	0	Clear	
Galveston, Texas	29.89	759.2	29.94	760.5	83	28.3	79	SE	6	2.7		2c	8ks	W	S	0.02	0.5	Cloudy	
Grand Haven, Michigan	29.32	744.7	29.95	760.7	64	17.8	94	Calm	0	0		Fog	0	Calm		0.02	0.5	Foggy	
Indianapolis, Indiana	29.23	742.4	29.99	761.7	66	18.9	94	SE	5	2.2			10s		Calm	0.83	21.1	Cloudy	
Indianola, Texas	29.88	758.9	29.91	759.7	83	28.3	83	S	13	5.8		10k	0	S		0	0	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	30.05	763.3	30.07	763.8	79	26.1	78	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.33	745.0	29.93	760.2	62	16.7	88	SE	4	1.8		1ck	0	Calm		0	0	Clear	
Key West, Florida	29.97	761.2	30.00	762.0	84.0	28.9	75	SE	6	2.7		2cs	1ks	S		0	0	Cloudy	
Kittyhawk, North Carolina	30.13	765.3	30.15	765.8	74	23.3	100	E	1	0.4		1c	Fog	NE		Inap.	Inap.	Fair	
Knoxville, Tennessee	29.08	738.6	30.06	763.5	66	18.9	94	Calm	0	0			Fog		Calm	0.10	2.5	Dense fog	
La Crosse, Wisconsin	29.20	741.7	29.92	760.0	58	14.4	81	S	5	2.2		0	0			0	0	Clear	
La Mesilla, New Mexico	25.96	659.4	30.11	764.8	69	20.6	60	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					81	27.2	74	SE	11	4.9		5ck	0	W		0	0	Fair	
Leavenworth, Kansas	29.01	736.8	29.82	757.4	65	18.3	90	SE	8	3.6		0	0			0	0	Clear	
Los Angeles, California	29.46	748.3	29.79	756.7	60	15.6	76	N	4	1.8		0	2s		N	0	0	Clear	
Louisville, Kentucky	29.46	748.3	30.01	762.2	68	20.0	90	SE	2	0.9		10ck	Fog	W	Calm	0.05	1.3	Cloudy	
Lynchburg, Virginia	29.45	748.0	30.11	764.8	71	21.7	90	Calm	0	0			10s		W	0.27	6.9	Cloudy	
Maricopa Wells, Arizona					72	22.2	85	S				2k	2s	NW	NW	0.06	1.5	Fair	
Marquette, Michigan	29.23	742.4	29.90	759.4	66	18.9	68	S	12	5.4		0	0			0	0	Clear	
Mason, Texas	28.26	717.8	29.93	760.2	75	23.9	76	SE	1	0.4		5c	2s	S	E	0	0	Fair	
Memphis, Tennessee	29.73	755.1	30.04	763.0	66	18.9	90	E	2	0.9		0	5ks; fg		SW; Calm	0	0	Fair	
Milwaukee, Wisconsin	29.32	744.7	30.00	762.0	59	15.0	100	W	6	2.7			Fog			0	0	Foggy	
Mobile, Alabama	30.03	762.7	30.07	763.8	74	23.3	90	S	3	1.3			10s		Calm	0	0	Cloudy	
Montgomery, Alabama	29.84	757.9	30.07	763.8	69.5	20.8	87	NE	1	0.4		10cs	Haze	Calm	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.02	737.1	30.04	763.0	67	19.4	81	Calm	0	0			10s		SW	0.08	2.0	Cloudy	
Mt. Washington, N. H.	24.10	612.1	30.46	773.7	52	11.1	65	W	4	1.8		2c	Haze	W	Calm	0	0	Clear	
Nashville, Tennessee	29.52	749.8	30.04	763.0	70	21.1	84	Calm	0	0		5k	0	SW		0.01	0.3	Fair	
New Haven, Connecticut	30.11	764.8	30.22	767.6	69	20.6	75	SW	8	3.6		8ck	Fog	Calm	Calm	0	0	Cloudy	
New London, Connecticut	30.18	766.6	30.23	767.8	66	18.9	90	Calm	0	0		5ck	Sm'e	SE	Calm	0	0	Smoky	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	78	25.6	86	S	1	0.4			10s		S	0.04	1.0	Threatening	
Newport, Rhode Island	30.18	766.6	30.22	767.6	66	18.9	90	SW	2	0.9		4c	5ks			0	0	Cloudy	
New York, New York	30.05	763.3	30.23	767.8	69	20.6	79	SE	3	1.3		5ck; k	5ks	W; Calm	Calm	0	0	Cloudy	
Norfolk, Virginia	30.09	764.3	30.15	765.8	74	23.3	90	SE	4	1.8		8c	0	Calm		0.23	5.8	Fair	
North Platte, Nebraska	26.82	681.2	29.24	742.7	65	18.3	93	SE	6	2.7		5c	0	SW		0	0	Fair	
Olympia, Washington Ter.	29.98	761.5	30.02	762.5	50	10.0	96	SW	1	0.4			Fog		SW	0.11	2.8	Foggy	
Omaha, Nebraska	28.72	729.5	29.76	755.9	63	17.2	88	SE	6	2.7		0	0			0	0	Clear	
Oswego, New York	29.82	757.4	30.14	765.5	69	20.6	79	SE	6	2.7		5c	0	SW		Inap.	Inap.	Fair	
Pembina, Dakota	29.02	737.1	29.84	757.9	49	9.4	89	NW	6	2.7		5c	0	Calm		0	0	Fair	
Philadelphia, Pennsylvania	30.15	765.8	30.20	767.1	66	18.9	89	E	9	4.0		2ck	8s	SW	S	0.68	2.0	Cloudy	
Phoenix, Arizona					77	25.0	72	E				0	8ks		S	0	0	Cloudy	
Pike's Peak, Colorado	17.84	453.1	30.05	763.3	32	0.0	69	SW	18	8.0		0	2s		SW	0	0	Clear	
Pioche, Nevada	23.76	603.5	29.53	750.0	49	9.4	31	S	9	4.0		0	Haze			0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.03	762.7	64	17.8	94	E	3	1.3			10s; fg		S; Calm	0.01	0.3	Cloudy	
Port Huron, Michigan	29.35	745.5	30.00	762.0	64	17.8	94	S	5	2.2			Fog			0	0	Foggy	
Portland, Maine	30.12	765.0	30.17	766.3	64	17.8	78	Calm	0	0		2ck	Sm'e	Calm		0	0	Smoky	
Portland, Oregon	29.96	761.0	30.05	763.3	51	10.6	93	S	4	1.8			10s		Calm	0.03	0.8	Cloudy	
Prescott, Arizona					59	15.0	94	S					10n		S	1.88	47.8	Light rain	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	82	27.8	78	E	10	4.5		0	5ks		Calm	0.25	6.3	Fair	
Red Bluff, California	29.50	749.3	29.85	758.2	59	15.0	43	NW	14	6.3		0	0			0	0	Clear	
Rochester, New York	29.48	748.8	30.08	764.0	69	20.6	79	S	4	1.8		2c	Haze	S	Calm	Inap.	Inap.	Fair	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.06	763.5	50	10.0	96	NE	2	0.9		0	5s		Calm	0.18	4.6	Fair	
Sacramento, California	29.71	754.6	29.79	756.7	60	15.6	44	NW	9	4.0		0	0			0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.98	761.5	65	18.3	89	SE	2	0.9			Fog		Calm	0	0	Foggy	
St. Marks, Florida	30.05	763.3	30.06	763.5	75	23.9	95	NE	2	0.9		5k	0	S		0.02	0.5	Fair	
St. Paul, Minnesota	28.99	736.3	29.78	756.4	63	17.2	77	SE	13	5.8		2c	2s	SW	SW	0	0	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.26	641.6	29.59	751.6	62	16.7	61	SW	8	3.6			10n		SW	0.02	0.5	Light rain	
San Antonio, Texas	29.19	741.4	29.74	755.4	79	26.1	91	Calm	0	0			10n		S	Inap.	Inap.	Light rain	
San Diego, California	29.76	755.9	29.83	757.7	64	17.8	73	S	10	4.5			10s		S	0	0	Cloudy	
Sandusky, Ohio	29.37	746.0	30.02	762.5	69	20.6	79	S	8	3.6		5c	Sm'e	S	Calm	0.05	1.3	Fair	
Sandy Hook, New Jersey	30.20	767.1	30.22	767.6	70	21.1	84	E	4	1.8		10ck	0	SW		0	0	Cloudy	
San Francisco, California	29.78	756.4	29.84	757.9	55	12.8	80	W	1	0.4		Haze	Sm'e		W	0	0	Smoky	
Santa Fé, New Mexico	23.20	589.3	29.74	755.4	54	12.2	61	SE	6	2.7		0	8s		SW	0	0	Fair	
Savannah, Georgia	30.00	762.0	30.08	764.0	83	28.3	74	Calm	0	0		1c	0	W		Inap.	Inap.	Clear	
Shreveport, Louisiana	29.77	756.1	29.98	761.5	72	22.2	90	SE	3	1.3		10cs	0	E		Inap.	Inap.	Cloudy	
Smithville, North Carolina	30.08	764.0	30.12	765.0	80	26.7	86	SW	8	3.6		5cs	0	W		0.04	1.0	Fair	
Springfield, Massachusetts	30.03	762.7	30.16	766.1	63	17.2	83	Calm	0	0		10ck	0	S		0	0	Cloudy	
Stanwix, Arizona					82	27.8	70	S				0	5ks		W	0.03	0.8	Fair	
Stockton, Texas					68	20.0	84	SE	8	3.6		0	1s		Calm	0	0	Clear	
Thatcher's Island, Mass	30.13	765.3	30.18	766.6	62	16.7	88	SW	4	1.8		2cs	0	SW		0	0	Hazy	
Toledo, Ohio	29.34	745.2	30.00	762.0	67	19.4	90	Calm	0	0		0	2ks		SW	0.73	18.5	Fair	
Tucson, Arizona	27.31	693.7	29.56	758.4	72	22.2	81	E				0	2ks		SE	0	0	Fair	
Tybee Island, Georgia	30.04	763.0	30.07	763.8	81	27.2	87	SE	6	2.7		0	2ks		S	0.12	3.0	Fair	
Umatilla, Oregon	27.54	699.5			57	13.9	76	NW	10	4.5		8k	0	W		0	0	Cloudy	
Vicksburg, Mississippi	29.79	756.7	30.04	763.0	72	22.2	95	SE	5	2.2		0	2s		SW	0	0	Clear	
Virginia City, Montana	24.04	610.6	29.52	749.8	46	7.8	69	SE	16	7.2			10s		SE	0.03	0.8	Cloudy	
Visalia, California	29.46	748.3	29.82	757.4	52	11.1	59	SW	2	0.9		0	0			0	0	Clear	
Washington, D. C.	30.06	763.5	30.17	766.3	69	20.6	100	E	6	2.7			10n		S	1.08	27.4	Light rain	
Wickenburg, Arizona					67	19.4	68	NW					10n		Calm	0.85	21.6	Heavy rain	
Wilmington, N. Carolina	30.04	763.0	30.11	764.8	78	25.6	90	Calm	0	0		2c	Fog	W	Calm	2.00	50.8	Fair	
Winnemucca, Nevada	25.45	646.4	29.81	757.2	43	6.1	50	S	8	3.6		10k	0	W		0	0	Cloudy	
Wood's Holl, Mass	30.18	766.6	30.23	767.8	68	20.0	84	SW	4	1.8		0	5s		SW	0	0	Fair	
Yankton, Dakota	28.50	723.9	29.74	755.4	63	17.2	86	SE	6	2.7		0	0			0	0	Clear	
Yuma, Arizona	29.62	752.3	29.78	756.4	75	23.9	56	SE	2	0.9		5k	0	E		Inap.	Inap.	Fair	
Sub-Series.																			
York Factory, B. A.	29.69	754.1	29.74	755.4	48.0	8.9	96	N	5	2.2		3ck	2s	SE	SE	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	81	27.2	79	SE	1.2	0.5		8c	2n	SE	Calm	0.38	9.7	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.15	765.8	30.16	766.1	79	26.1	92	Calm	0	0		5c	2s	SE	Calm	0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.89	759.2	29.97	761.2	83.5	28.6		E			2					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					86	30.0	80	NE				2c	2s	NE		0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.85	758.2	29.87	758.7	83	28.3	87	NE				2s	5ks		NE				L. V. Bigard.
Bridgetown, Barbados, W. I	30.04	763.0	30.06	763.5	84	28.9	45	NE	3	1.3		5ck	5ks	NE		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.01	762.2	84	28.9	75	E	3	1.3		4c	5k	E		0.300	7.62	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.26	641.6			66.8	19.3	87	Calm			0		10s;n			0.60	15.2	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.08	764.0	30.10	764.5	73.5	23.1		NE			5					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.: Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.: Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.38 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.90	759.4	58	14.4	58	14.4	94	NW	11	4.9			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.16	766.1			77	25.0	77	NNW	5	2.2			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.22	767.6	72	22.2	64	17.8	78	W			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	29.85	758.2	73	22.8	72	22.2	90	Calm			0		8k;s		W	0.34	8.6			Cloudy	
Adams, S. 32° 07′, W. 48° 11′	30.11	764.8	68	20.0	63	17.2	89	SSE			6		8		SE	0	0	Long	SE	Squally	
Alert, Yokohama, Japan	30.02†	762.5†	76	24.4	76	24.4	95	Calm			0		7		N			Smooth		D. clouds	
Alliance, Constantinople, Turkey	30.19	766.8	70	21.1	75	23.9	37	NNE			4–5		5		N					Pleasant	
Ashuelot, Che-foo, China	29.96	761.0	76	24.4	75	23.9	72	WNW			0–1		2							Hazy	
Canonicus, New Orleans, La	30.03	762.7	55	12.8	76	24.4	95	Calm			0		10							Raining	
Colorado, New York, N. Y.	30.22†	767.6†	69	20.6	70	21.1	80	SE	3	1.3			7		SE	0	0			Cloudy	
Despatch, Beikos Bay, Bosphorus	30.20	767.1	70	21.1	68	20.0	65	NNE			5		6		N			Smooth		Cloudy	
Essex, N. 35° 17′, W. 24° 39′	30.24	768.1	73	22.8	77	25.0	82	SE			2		1		SE			Long	N	D. clouds	
Franklin, Norfolk, Va.	30.18	766.6	72	22.2	75	23.9	100	SE	4	1.8			2		SE	1.25	31.7			D. clouds	
Frolic, Bahia, Brazil	30.29	769.4	76	24.4	76	24.4	100	ENE			3		10kn		S&W	Heavy	Heavy	Smooth		Showery	
Gettysburg, Naples, Italy	29.97‡	761.2‡			81	27.2	100	WSW			1		1		Calm	0	0			D. clouds	
Kearsarge, Hong-Kong, China	30.00	762.0			82	27.8	96	SSW			4		4		S&W	0	0	Smooth		D. clouds	
Lackawana, Neeah Bay, W. T.	30.18	766.6			56	13.3	75	S&W			1		7		S&W			Ground	NW	D. clouds	
Marion, Smyrna, Turkey	29.92	760.0	76	24.4	77	25.0	49	NE			4		2		NE	Heavy	Heavy	Chop	NE	D. clouds	
Michigan, Buffalo, N. Y.	29.62	752.3	71	21.7	70	21.1	80	SE			1		2		SE					Clear	
Monocacy, Yokohama, Japan	29.85	758.2	75	23.9	73	22.8	90	NE			1		8		N&W	Light	Light			D. clouds	
New Hampshire, Port Royal, S. C.	30.28	769.1			80	26.7	82	S	8	3.6			2		NW	0.02	0.5			D. clouds	
Omaha, Caldera, Chili	30.02	762.5	61.5	16.4	60	15.6	88	NNW	2	0.9			10		N	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.08†	764.0†	67	19.4	65	18.3	89	SE			2		10					Long	W	D. clouds	
Ossipee, N. 38° 11′, W. 74° 49′	30.19	766.8	72	22.2	71	21.7	90	ENE			3		8		ENE			Ground	E	D. clouds	
Palos, Off Yangtse Light-ship	29.99	761.7	82	27.8	82	27.8	83	S			4		2		S&E	Blank	Blank	Mod'ate ground		Hazy	
Plymouth, New York, N. Y.	30.40	772.1	76	24.4	71	21.7	100	Calm			0		9		W					Cloudy	
Ranger, Nagasaki, Japan	30.12	765.0			75	23.9	86	Calm			0		10		Calm					Raining	
Rio Bravo, Brownsville, Texas	29.75	755.6			80	26.7	96	SE			1		2		Calm					D. clouds	
Santee, Annapolis, Md.	30.26	768.6	72	22.2	70	21.1	90	S			2		10		SW	0.01	0.3			Overcast	
St. Louis, League Island, Pa	30.12	765.0	68	20.0	70	21.1	85	E	5	2.2			8		SW	0.05	1.3			Cloudy	
Tennessee, Yokohama, Japan	29.87	758.7	76	24.4	74	23.3	86	SE	2	0.9			9			0.42	10.7	Smooth		D. clouds	
Trenton, Marseilles, France	30.18†	766.6†	76	24.4	75	23.9	81	NW	5	2.2			8		N&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.96	761.0	79	26.1	78	25.6	46	NE			3–5		3		NE					Squally	
Wabash, Boston, Mass.	30.23	767.8	66	18.9	68	20.0	74	W	4	1.8			5		W	0	0			Hazy	
Wyoming, Washington, D. C.	30.22†	767.6†	73	22.8	72	22.2		E			1		10		E					Raining	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			
Hong Kong, China.					85	29.4		SSW			2		1		SW			Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
S. S. Oceanic																			Capt. W. H. Kidley.
																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			
N. 37° 51′, W. 73° 57′	SWby W¾W		30.18	766.6	77.5	25.3	84	SE			3		0			Tranq'l		Blue sky	Capt. A. Jaeger.
S. S. Ohio																			
Bremerhafen.			29.97	761.2	68.0	20.0	56	WSW			3		k		WSW			Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—Continued.

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

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 48° 04′, W. 48° 22′			29.75*	755.6*	59	15.0		Calm			0		2		E	Moderate	E	Fine	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Off Hilton Head, S. C.	NNW	4	30.01	762.2	81	27.2	87	SW	6	2.7		2k	0	W		Short		Clear	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 13, 1877.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.13	765.3	82.0	27.8	68	NNW			2		2			0.276	7.0	Clear	Michel.
Algiers			30.10	764.6	80.6	27.0	92	ESE			1		10			0.165	4.2	Hidden	Peter.
La Calle			30.11	764.7	79.9	26.6	73	ENE			3		4			0	0	Fair	Fleury.
Tunis			30.15	765.9	86.0	30.0		NE			3		2			0	0	Clear	Jacques.
Stax			30.19	766.9				E			3		0			0	0	Clear	Husson.
Saida			30.10	764.4	76.3	24.6		W			2		9			0.106	2.7	Hidden	Millot.
Tebessa			30.13	765.4	84.4	29.1		N			1		2			0.394	10.0	Clear	Bourgeois.
Geriville			30.06	763.5	75.7	24.3	38	SE			2		6			0.157	4.0	Fair	Lemaillot.
Laghouat			30.16	766.1	78.8	26.0	92	W			2		4			0.118	3.0	Fair	François.
Biskra			30.17	766.4	88.2	31.2	54	SE			2		8			Inap	Inap.	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 800? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Agram	29.57	751.0	30.10	764.6	74.7	23.7	43	SW			2		4			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.37	746.1	30.13	765.4	60.4	15.8	89	W			2		10			0.173	4.4		Dr. Wierzbiski.
Eperies	29.24	742.8	30.11	764.7	65.1	18.4	67	Calm			0		5c			0	0		Julius Mikolik.
Gratz	28.89	733.9	30.11	764.9	67.3	19.6	76	E			2		7			0	0		Andreas Rospini.
Hermannstadt	28.72	729.5	30.11	764.8	66.2	19.0	56	NW			2		3			0	0		Prof. Reissenberger.
Kremsmünster	28.87	733.3	30.20	767.0	61.5	16.4	81	W			2		10			0.709	18.0		Prof. C. Wagner.
Lemberg	29.08	738.6	30.04	763.1	66.6	19.2	65	SE			1		6			0.146	3.7		Dr. T. Stanecki.
Pola	30.02	762.4	30.13	765.2	76.1	24.5	65	W			1		4cs			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.86	758.5	30.13	765.4	67.6	19.8	57	Calm			0		8			0	0		Karl Stancel.
Trieste	30.04	763.0	30.14	765.6	72.9	22.7	71	Calm			0		0			0	0		P. Busin.
Vienna	29.47	748.5	30.15	765.8	67.3	19.6	82	W			3		4			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 497.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Arlon	28.71	729.3	30.21	767.3	61.5	16.4	64	SSW			3		10			0	0	Solar halo	Royal Observatory.
Brussels	29.04	760.4	30.13	765.4	65.8	18.8	63	SSW			6	1	8		WSW; SW	0	0		
Furnes																			
Maeseyck	30.00	762.1	30.13	765.4	64.8	18.2	85	SW			6		10			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.51	749.5	29.61	752.1	58.1	14.5		S	17	7.6			7			0.370	9.40	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	29.51	749.5	29.52	749.8	57	13.9		SE			2		5					Raining	William McNeil.
Armagh, Observatory			29.50	749.3	60.5	15.8		SW					10					Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.72	754.9	58.7	14.8		S	22	9.8			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.58	751.3	62.6	17.0		SSW			3–4		10					Raining	J. Dreyer.
Bradford, Yorkshire	29.36	745.7	29.76	755.9	59.6	15.3		S			3		10			0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.95	760.7	62.5	16.9		SW			3–4		10					Showery	H. Todd. [H.C
Cardington			29.96	761.0	64.0	17.8		WSW			4		8					Overcast	John McLaren.
Chatham, School M. E.	29.90	759.4	30.02	762.5	61.2	16.2		SW			2		9					Drizzling	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.56	725.4	30.03	762.7	55.2	12.9		SW			6		10					Rain and fog	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.47	748.5	29.50	749.3	58	14.4		SW			6		10					Raining	J. Mac Gowan.
Dover	30.05	763.3	30.07	763.8	63	17.2		SW			6		7					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.76	755.9	57.7	14.3		SSE	10.2	4.6			10					Raining	Thomas Mackereth.
Falmouth, Observatory	29.77	756.1	29.99	761.7	60.0	15.6		SSW			6		10					Raining	The Staff.
Fort Napier, (Natal)	27.50	698.5	29.70	754.4	84.6	29.2		NE?			4		8					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.98	761.5	76.0	24.4		Calm?			1?		6					Raining	
Galway, Queen's College			29.47	748.5	62	16.7		SW			8		10					Raining	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.11	764.8	77.7	25.4		E			2		1					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.35	745.5	29.55	750.6	55.0	12.8		ESE			2		10					Raining	D. G. Maclean.
Great Yarmouth	29.95	760.7	29.96	761.0	65	18.3		WSW			4		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.84	757.9	30.01	762.2	62.3	16.8		SW			4		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.89	759.2	30.10	764.5	65.5	18.6		SSW			4		7					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.02	762.5	60	15.6		S			4		10ck			0.4	10.		M. P. Moyle.
Holyhead	29.63	752.6	29.68	753.9	60	15.6		SW			6		10					Raining	John Tilston.
Jersey	29.86	758.4	30.15	765.8	65.0	18.3		SW			6		10			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			30.02	762.5	62.1	16.7		SW	22	9.8			10					Raining	The Staff.
Kingstown	29.59	751.6	29.61	752.1	64	17.8		SW			6		9			Blank	Blank	Overcast	George Mitchell.
Leicester, Museum			29.89	759.2	59.8	15.4		SW			3		10					Drizzling	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.06	763.5	30.13	765.3	81.6	27.6		NE			1		6					D. clouds	Corp'l. P. Bravis, A. H. C.
Nairn	29.43	747.5	29.52	749.8	60	15.6		SW			1		10					Raining	W. D. Penny.
Nassau, (Bahamas)			30.06	763.5	86.2	30.1		SE			1		4			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.66	753.4	29.85	758.2	60.5	15.8		SSW			4		10n		SSW	0.030	0.76	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.35	745.5	29.86	758.4	57.2	14.0		SSW			6		10					Threatening	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.95	760.7	61	16.1		SSW			3		10					Drizzling	F. Lucas
Plymouth	29.94	760.5	30.02	762.5	60.5	15.8		SW			4		10					Raining	John Merrifield.
Roche's Point	29.65	753.1	29.70	754.4															W. Kennedy.
Saint Ann's Head	29.66	753.4	29.82	757.4	61	16.1		SSW			7		10					Raining	John C. Walker.
Sandwick Manse, (Orkneys)			29.52	749.8	59	15.0		SW	15	6.7			1					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.12	765.0	75.0	23.9		NE			2		3					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.54	750.3	29.78	756.4	60.3	15.7		SW			4		10			0.074	1.88	Drizzling	W. F. Cooper.
Silloth Rectory	29.57	751.1	29.60	751.8	58.2	14.6	92	SW			3		10			0.715	18.16	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					50.9	10.5		S			5		10					Raining	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.41	747.0	56	13.3		SSW			6		10					Overcast	John Smith.
Stratfield Turgiss	29.81	757.2	30.02	762.5	62.0	16.7		SW			2		10					Squally	Rev. C. H. Griffith, F. M. S
Thurso			29.47	748.5	58	14.4		SW			2		7					D. clouds	John Trotter.
Truro, Royal Institution			30.00	762.0	63	17.2		SW			8		8					Gloomy	W. Newcombe.
Valencia, Observatory			29.60	751.8	60.7	15.9		SSW	46	20.6			10					Squally	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					55	12.8		SW			4		10			0.12	3 0		Henry Mercer.
Cape Good Hope, Obs'y	30.04	763 0	30.08	764.0	61.7	16.5	82	NW	21	9.4		9	9						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.11	764.8	38 0	3.3	86	S			2		0			0	0		Francis Abbott, F. R. A. S.
Leith, Restalrig Park			29.62	752.3	56.1	13 4		E			1		10n			0.16	4.1	Raining	Andrew Gibb.
Mauritius, Observatory	29.99	761.7	30.18	766.6	73.0	22.8	61	E	21.0	9.4		1	3	WSW	ESE	0.01	0.3	Fine	C. Meldrum.
Melbourne, Observatory	30.24	768.1	30.33	770.4	43.0	6.1	77	S	13	5.8			9			0.52	13.2	Rain & hail	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.39	746.5	56	13.3		SW			6		10			0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			29.52	749.8	54	12.2		SW			4		10					Foggy	Robert Burnet.

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

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 50° 8′, W. 26° 50′			29.59	751.6	57	13.9		WNW			3		4			*12.5	E. NNW & SW	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 44° 5′, W. 45° 5′			29.91	759.7	67	19.4		WNW			4		2			2	WNW	Blue sky	Capt. J. E. Moulind.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 40° 40′, W. 68° 15′			30.15	765.8	64	17.8		SW			1		4			0		D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson.

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
San José	26.22	666.0			68.4	20.2	95	E			1		10n			0	0		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.84	757.9	29.89	759.1	64.4	18.0	58	WSW			2		3						
Fanöe	29.88	758.9	29.90	759.4	62.1	16.7	73	WSW			6		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.15	740.5	29.29	741.6	51.8	11.0	95	SE			4		8						
Thorshavn, (Faröe)	29.25	743.0	29.29	743.9	54.9	12.7	89	NW			2		10						
Vestervig	29.68	753.8	29.85	758.1	58.1	14.5	76	WSW			6		7						

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

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.68	753.8	30.23	767.8	64.4	18	71	SW			1		5		W	0	0	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.05	763.3	30.13	765.3	76.6	24.8	51	N			3		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine †																0	0		C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.93	760.1	30.21	767.3	66.7	19.3	64	SW			3		8		WSW	0	0	Very cloudy	Normal School.
Besançon	29.36	745.8	30.23	767.9	68.7	20.4	68	SW			4		2		W	0.08	2.	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.40	746.7	30.34	770.5	70.7	21.5	77	W			2		5cn		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.71	754.7	30.26	768.5	67.1	19.5	68	SW			3		5		SW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.86	758.5	30.08	764.1	67.1	19.5	77	SW			5		6		SW	0	0		The Staff.
Carcassonne, Normal School	29.81	757.1	30.23	767.8	82.6	28.1	53	W			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons sur-Marne, N. Sch'l	29.94	760.5	30.26	768.5	66.2	19.0	72	SSW			6		5ck		SE	0.039	1.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D.Obs.	28.90	734.1	30.22	767.6	72.0	22.2	51	N			1		5		NW	0.524	13.3	Cloudy	Alluard, Director.
Commercy, Normal School	29.42	747.3	30.28	769.1	64.8	18.2	65	W			4		2		W	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.08	738.6	30.22	767.6	84.7	29.3	29	NW			2		2		NW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.08	764.0	30.29	769.4	65.8	18.9	61	NE			2		2		NE	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.98	761.5	30.28	769.2	66.9	19.4	60	WSW			4		8		SW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.36	745.8	30.26	768.7	67.1	19.5	66	W			1		2		SW	0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	30.13	765.2	30.23	767.7	68.4	20.2	69	SW			5		5		SW	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.61	752.1	30.28	769.2	68.7	20.4	77	E			2		2			0.004	0.1	Slightly cl'dy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.21	741.9	30.24	768.1	65.1	18.4	60	SW			1		2		SW	0.028	0.7	Slightly cl'dy	Normal School
Nismes, Normal School	29.71	754.6	29.90	759.5	88.2	31.2	37	S			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.98	761.6	30.22	767.5	67.3	19.6	50	SSW			1	8c		SW		0	0	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.23	767.9	30.26	768.7	72.0	22.2	56	SW			2		5		W	0	0	⅓ covered	Lt. Decante, Director.
Rouen, Normal School	30.10	764.6	30.19	766.8	70.5	21.4	50	SW			2		5		SW	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.19	741.3	30.16	766.1	78.4	25.8	59	E			1		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.86	758.5	29.89	759.2	83.1	28.4										0.08	2.		L'Abbé Marchésl.
Marseilles, Observatory			30.13	765.4	82.8	28.2	40	WSW			2-3		1			0	0		The Staff.
Mont-Louis	25.13	638.4	30.45	773.4	60.4	15.8	62	SE	14.9	6.66			4		NW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.94	760.5	30.22	767.5	67.3	19.6	55	SW			3		7		WSW	0	0		Marié Davy, Director.
Perpignan			30.21	767.2	77.0	25.0	51	SE	3.7	1.67			1		NE	0.189	4.8		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.53	546.6			53.2	11.8		NW			3		9					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.78	578.5			55.0	12.8		NW			2		9			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.06	763.4	30.22	767.6	69.8	21.0	51	SW			2		3	W	SW	0	0		E. Renou.
Toulouse, Observatory	29.56	759.7	30.28	769.1	73.6	23.1	48	NNE			1		2			0	0		The Staff.
Tours	29.98	761.5	30.18	766.5	72.0	22.2	58	W			1		2		W	0	0		C. Marquet.
Versailles, (near Paris)			30.23	767.8	67.3	19.6	57	W			2		8			0.004	0.10	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.94	760.4	29.96	761.0	66.4	19.1	99	Calm	0	0			2ks			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,273.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Observation not simultaneous.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.92	760.0	30.09	764.3	68.0	20.0	50	SW			1		9			0	0		Prof. Arndt.
Breslau	29.61	752.0	30.14	765.5	70.5	21.4	50	WSW			4		9			0	0		Royal University Obs'y.
Carlsruhe	29.78	756.3	30.20	767.0	69.4	20.8	52	SW			3		5			0.039	1.0		Albert Senz.
Cassel	29.59	751.6	30.21	767.2	68.7	20.4	54	WSW			2		8	SW		0	0		Dr. H. Möhl.
Crefeld	29.97	761.1	30.13	765.2	66.2	19.0	68	SW			5		9			0	0		Director Lose.
Emden	29.97	761.1	30.00	762.0	64.0	17.8	61	W			6		1			0	0		Prof. Prestel.
Frankfort on the Main	29.87	758.8	30.23	767.9	70.5	21.4	43	SW			2		6			0	0		Physical Society.
Friedrichshafen	28.84	732.5	30.24	768.2	67.5	19.7	75	SSW			3		3	SW		0	0		M. Wilhelm.
Hamburg	29.97	761.2	30.04	763.0	64.4	18.0	72	WSW			5		6c;kn			0.205	5.2	Showery	Captain F. Hegemann.
Kiel	29.95	760.8	29.97	761.3	63.5	17.5	60	SW			4		7			0.112	2.85		Prof. G. Karsten.
Königsberg, (Prussia)	29.89	759.2	29.96	761.0	65.8	18.8	88	SW			1								Prof. E. Luther.
Köslin			30.02	762.4	62.2	16.8		SW			4		4						H. Müller.
Leipsic, Observatory	29.74	755.5	30.16	766.0	68.7	20.4	47	W			4		9	W		0	0		Prof. Bruhns.
Memel, Naval School	29.93	760.3	29.98	761.5	62 2	16.8	80	SW			2		9c;ks						Reinbrecht von Skalweit.
Neufahrwasser	29.98	761.6	30.00	762.0	66.7	19.3	61	WNW			1		10	WSW		0.197	5.0		A Lothes.
Posen	29.83	757.7	30.11	764.8	71.6	22.0	40	NW			6–7		10			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.70	754.4	30.24	768.0	71.8	22.1	42	NW			2		4	SW		0.040	1.02		Dr. Schur.
Stuttgart	29.24	742.7	30.17	766.3	69.8	21.0	51	NW			3		5	W		0	0		Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.72	729.5	30.19	766.9	67.6	19.8	54	W			1		6	SW		0.079	2.0		Dr. Von Bebber.
Wustrow, Naval School	30.02	762.5	30.06	763.5	63.3	17.4	73	SW			4		10			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.76	756.0	30.15	765.7	77.0	25.0		N										Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29 77	756.2	29.82	757.5	83.9	28.8	69	SW	35.0?	15.6?			7		SW	0	0	D. clouds	
Deesa																			
Bombay	29.87	758.7	29.91	759.7	83.6	28.7	74	W	8.0	3.6			4	SE	SW	0.04	1.0	Misty	
Poona	27.78	705.7	29.77	756.2	80.6	27.0	63	W					5		NW	0	0	D. clouds	
Lahore	28.90	732.9	29.62	752.2	95.4	35.2	35	Calm	1.5	0.7			0			0	0	Blue sky	
Belgaum	27.42	696.4	29.99	761.8	71.1	21.7	85	W	9.0	4.0			9		W	0.02	0.5	D. clouds	
Bangalore																			
Roorkee	28.73	729.6	29.59	751.6	95.0	35.0	30	NW	3.7	1.6						0	0	Hot wind	
Agra	29.04	737.7	29.59	751.5	97.2	36.2	34	Calm								0	0		
Trichinopoly																			
Nagpur	28.73	729.8	29.77	756.1	85.3	29.6	59	Calm	2.3	1.0			6			0	0	D. clouds	
Madras																			
Lucknow	29.28	743.6	29.64	752.7	95.1	35.1	36	WNW	4.3	1.9			3	E		0	0	D. clouds	
Allahabad	29.39	746.4	29.69	754.1	89.6	32.0	53	SW	4.6	2.1			2	SE		0	0	D. clouds	
Patna	29.53	750.0	29.71	754.6	88.4	31.3	55	Calm	0.9	0.4			10			0	0	Overcast	
Hazaribagh	27.76	705.0	29.76	755.9	79.6	26.4	78	W	10.3	4.6			10					Raining	
Cuttack	29.72	754.8	29.80	756.9	85.0	29.4	77	WNW	2.3	1.0			4			0	0	D. clouds	
Calcutta (Alipore)	29.76	756.0	29.79	756.6	83.4	28 6	61	WSW	3.0	1.3			6	WSW		0	0	D. clouds	
Goalpara	29.36	745.6	29.75	755.6	74.7	23.7	93	Calm	9.9	4.4			10			0.76	19.3	Drizzling	
Chittagong	29.77	756.1	29.86	758.5	78 9	26.1	86	SSW	4.0	1.8			4			0	0		
Sibsagar	29.41	746.9	29.74	755.4	83.2	28.4	78	SSW	1.9	0.8			10	WSW		0.07	1.8	D. clouds	
Rangoon																			
Jubbulpore	28.46	722.8	29.82	757.3	81.8	27.7	66	SW	4.7	2.1			5		SW	0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given: the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Bangalore, 2,989 ft., or 911.0 m.: Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.46	570.6	30.15	765.8	52.5	11.4	68	NNW			4		7	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.39	568.7	30.12	765.0	48.4	9.1		NE			1		7	SSE		0	0		Signora Ernesta Manfredi.
Udine	29.71	754.6	30.11	764.8	75.0	23.9	58	S	0.7	0.3			3			0	0		Prof. Giovanni Clodig.
Padua	29.99	761.8	30.10	764.5	75.7	24.3	39	E	1.3	0.6			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.91	759.7	30.10	764.4	77.5	25.3	45	NNW	2.5	1.1			1			0	0		Conte Alm. Da Schio.
Verona	29.87	758.7	30.08	764.1	85.1	29.5	39	SW			1		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.82	731.9	30.09	764.3	77.7	25.4	55	S			2		1			0	0		Prof. Trionfini Carlo.
Domodossola	29.87	758.6	30.07	763.7	75.2	24.0	61	S			6		2			0	0		Prof. Giuseppe Calza.
Milan	29.60	751.7	30.09	764.3	81.9	27.7	53	W			1		1	E		0	0		Ab. Gio. Capelli.
Pavia	29.77	756.1	30.10	764.6	77.9	25.5	48	N			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.19	741.4	30.07	763.6	78.1	25.6	49	SSW	1.8	0.8			1			0	0		Prof. P. F. Denza.
Mondovi	28.24	717.3	30.08	763.9	77.2	25.1	46	ESE			2		3			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.98	761.4	30.15	765.9	75.2	24.0	66	SSE			2		2			0	0		Prof. L. Vassallo.
Genoa	29.98	761.6	30.15	765.8	77.0	25.0	64	SW	3.8	1.7			2	SE		0	0		Prof. G. M. Garibaldi.
Piacenza	29.85	758.3	30.10	764.6	77.7	25.4	42						2			0	0		Dott. G Manzi.
Parma	29.80	756.9	30.11	764.7	81.3	27.4	54	NNW			4		1			0	0		Prof. P. Pigorini.
Florence	29.91	759.8	30.16	766.0	80.1	26.7	41	SW			2		1			0	0		Cav. F Meucci.
Leghorn	30.03	762.8	30.11	764.9	77.5	25.3	64	W	1.8	0.8			2			0	0		Prof. P. Monte.
Siena	28.97	735.7	30.12	765.1	77.5	25.3	33	WNW	0	0			6	SW		0	0		Prof. L. Toscani.
Urbino	28.62	727.0	30.14	765.6	72.9	22.7	68	NE			2		5			0	0		Prof. P. Serpieri.
Pesaro	30.10	764.6	30.15	765.8	73.6	23.1	77	NE	13.0	5.8			8	SW		0	0		Prof. Luigi Guidi.
Ancona	30.04	762.9	30.14	765.5	74.8	23.8	64	SE			4		2			0	0		Prof. F. DeBosis.
Grosseto	30.10	764.4	30.20	767.1	77.7	25.4	56	ENE			2		7	S		0	0		Avv. P. Ponticelli.
Rome	29.98	761.4	30.15	765.7	82.4	28.0	56	N	1.8	0.8			7			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.98	761.6	30.18	766.5	82.4	28.0	52	SW			2		5	SE		0	0		Prof. L. Palmieri.
Lecce	29.89	759.2	30.13	765.4	74.5	23.6	59	NNE	1.3	0.6			1			0	0		Prof. C. DeGiorgi.
Cosenza	29.29	743.9	30.14	765.5	83.5	28.6	49	NNW	1.8	0.8			0			0	0		Prof. F. D. Conti.
Cagliari	29.89	759.2	30.08	763.9	81.5	27.5	56	SE			4		4	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.02	762.4	30.07	763.6	81.5	27.5	62	SE			2		5	SE		0	0		Prof. F. Caflero.
Palermo	29.86	758.4	30.10	764.6	79.9	26.6	55	ENE	6.3	2.8			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.22	716.7	30.08	763.9	79.5	26.4	36	NNW			2		4	S		0.004	0.1		Prof. A. Pagani.
Syracuse	30.03	762.7	30.10	764.4	80.2	26.8	57	SSE			2		5	W		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.65	753.1	30.21	767.2	79.7	26.5	52	WNW	1.8	0.8			5	SE		0	0		Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.90	759.4	29.98	761.4	72	22.2	90	Calm	0	0			10			0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Mexico, Central Obs'y	23.14	587.8	30.15	765.7	56.3	13.5	90	Calm	0	0		0	9k		NE	0.45	11.3	Cloudy	Mariano Bárcena. Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

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

Flushing	30.12	765.0	30.12	765.0	66.0	18.9		WSW			4					0.039	1.0		
Groningen	29.97	761.1	30.02	762.5	62.4	16.9		W			4					0.055	1.4		
Helder	30.00	762.1	30.00	762.1	63.7	17.6		SW			4					0.197	5.0		
Utrecht	30.04	763.1	30.09	764.3	66.6	19.2	72	SSW			5		8			0.004	0.1	Very cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

Bergen	29.53	750.1	29.59	751.5	59.4	15.2	74	S	9.8	4.4			3			0.063	1.6		
Brönö	29.52	749.8	29.56	750.8	55.8	13.2	68	Calm	0	0			8			0	0		
Christiania	29.47	748.6	29.61	752.2	58.1	14.5	83	S	4	2			6			0.528	13.4		
Tromsö	29.69	754.0	29.73	755.1	48.6	9.2	68	NE	13	6			0			0	0		

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

PORTUGUESE SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.81	757.1	30.00	761.9	70.7	21.5	87	WSW	3.1	1.4			8			0	0		Dr. J. A. Sampaio
Campo Major	29.15	740.5	30.14	765.5	81.5	27.5	36	ENE	3.1	1.4			1			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.11	764.7	30.19	766.9	74.8	23.8	61	SE	8.1	3.6			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.83	757.6	30.18	766.5	73.6	23.1	55	E	9.8	4.4			0			0	0		The Staff.
Ponta Delgada, (Azores)	30.00	762.0	30.07	763.8	73.0	22.8	74	SSW	9.4	4.2			3			0	0		

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

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India N. 38° 17′, W. 18° 44′				30.19	766.8	73.4	23.0	74	SSE			5		8		S	6	S	D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

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

RUSSIAN SERIES.

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

Warsaw	29.63	752.7	30.04	763.1	67.8	19.9	45	WNW	9	4			1						Astronomical Obs.
Wilna	29.57	751.0	29.97	761.3	64.4	18.0	63	S	2	1			7						Astronomical Obs.
Dorpat	29.62	752.4	29.86	758.4	62.8	17.1	64	SSW	4	2			10						Physical Cabinet.
St. Petersburg	29.82	757.5	29.84	757.9	57.0	13.9	67	WSW	11	5			6						Central Physical Obs
Kuopio	29.39	746.6	29.71	754.7	50.0	10.0	96	W	7	3			10						Ch. Forsten.
Kieff	29.46	748.3	30.09	764.3	59.2	15.1	54	SW	2	1			5						Physical Cabinet.
Nikolaiev	30.12	765.1	30.19	766.9	66.9	19.4	40	NNW	0	0			2						Kurdakof.
Kertch	30.17	766.2	30.19	766.7	66.4	19.1	56	NNW	4	2			6						Lagorio.
Moscow	29.48	748.7	30.02	762.5	57.2	14.0	57	SSE	9	4			4						Meteorological Obs.
Lugan	29.81	757.2	30.01	762.3	61.0	16.1	49	NNW	13	6			9						Meteorological Obs.
Archangel	29.62	752.3	29.64	752.8	42.6	5.9	86	S	22	10			10					Raining	Ogorodnikof.
Tiflis	28.56	725.5	29.96	760.9	64.0	17.8	59	NW	9	4			8						Physical Observatory.
Astrakhan	30.07	763.7	29.98	761.6	64.6	18.1	44	N	7	3			8						Sebastianof.
Kasan	29.57	751.1	29.84	758.0	49.8	9.9	79	W	4	2			6						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	28.67	728.1	29.60	751.8	52.2	11.2	63	W	13	6			6						Meteorological Obs.
Nukuss	29.41	746.9	29.63	752.5	88.9	31.6	28	SE	9	4			0						
Kasaly																			Bobrof.
Tashkend	28.28	718.3	29.93	760.1	72.1	22.3	78	Calm	0	0			0						Michelson.
Barnaul	29.41	746.9	29.92	759.9	58.1	14.5	58	Calm	0	0			10						Meteorological Obs.
Yeniseisk	29.81	757.1	29.95	760.8	54.7	12.6	81	SW	2	1			2						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.67	753.5	29.81	757.1	74.3	23.5	74	Calm	0	0			9						Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					51.8	11.0	96	E	9	4			10					Raining	

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.99	711.0			79.0	26.1	44	E	2.2	1.0		2	2	NNE		0	0	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.95	760.7	30.03	762.8	82.9	28.3	82	E	8.5	3.8		2ck	1k	S		Inap.	Inap.	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.04	762.9	30.13	765.4	76.8	24.9	63	WSW	10.6	4.7		0	2		W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.90	759.4	82.4	28.0	88	S				1s	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

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

SWEDISH SERIES.

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

Haparanda	29.75	755.7	29.79	756.7	52.2	11.2	78	NE			2		10			0	0		
Umea	29.64	752.9	29.69	754.2	55.0	12.8	80	NE			2		10			0	0		
Hernosand	29.60	751.9	29.65	753.2	62.2	16.8	72	SW			2		7			0	0		
Stockholm	29.53	750.1	29.71	754.6	61.9	16.6	73	WSW			4		9			0	0		
Wisby	29.78	756.5	29.84	758.0	57.6	14.2	74	SW			6		5			0	0		
Sub-Series.																			
Upsala	29.61	752.1	29.69	754.0	60.8	16.0	75	SSW	11.0	4.9			7			0.069	1.75		Dr. Hildebrandsson.

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

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Geneva	26.83	732.3	30.21	767.3	70.7	21.5	51	N			1		1			0	0	Clear	The Observatory.
Zurich	28.65	727.8	30.25	768.3	67.6	19.8	62	NW			1		3			0	0	Bright	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +5.2 mm; Thermometer, +3.0 cent.; Relative Humidity, —11 per cent.

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

TURKISH SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Constantinople			30.18	766.5	69.3	20.7	48	NNE	16	7.0			4		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.28	769.2	77.5	25.3		S			1		0						B. Stéfanidès.
Valona			30.24	768.2	77.4	25.2		NW			2		0			0	0	Clear	A. Bertrand.
Varna			30.08	764.0	57.2	14.0		NE			2		0						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.67	753.6	29.79	756.6	82.9	28.3	57	N			2		2k			0.25	6.3	D. clouds	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.	29.74	755.4	29.81	757.2	57.9	14.4	64	Calm	0	0			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.08	764.0	64	17.8		SW	5	2.2		0	2s		SW	0	0	Fair	W. R. Bigg.
*Chatham, N. B.			29.84	757.9	66	18.9	89	SW	9	4.0		5c	5s	SW	SW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island			29.86	758.4	65	18.3	82	SW	8	3.6			10s		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.84	757.9	30.02	762.5	67.0	19.4	87	SW			2	3ck	0	NW		0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.75	755.6	29.78	756.4	66.8	19.3	84	W			3					0	0	Overcast	H. A. Johnson.
Esquimault, B. C.	29.81	757.2	29.85	758.2	54.2	12.3	100	SW				7ck	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			29.80	756.9	59	15.0	85	SW	38	17.0		5c	5s	SW	SW	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.87	758.7	29.93	760.2	66.9	19.4	85	SE	2	0.9		10ck	0			Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.69	754.1	60	15.6	100	E	5	2.2		5k	8n	W	E	0.740	18.80	Thunder-storm	James Stewart.
Goderich, Ontario	29.35	745.5	30.12	765.0	65.1	18.4	84	Calm			0	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	29.03	737.3	30.11	764.8	60	15.6	100	Calm			0	0	0			0	0	Foggy	James Grant.
*Halifax, N. S.	29.80	756.9	29.93	760.2	62	16.7	88	W	8	3.6			8ks			0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.77	756.1	30.13	765.3	68.1	20.1	88	W			1	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.65	753.1	29.67	753.6	65	18.3	73	SW			5	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.78	756.4	30.13	765.3	70	21.1	89	SW	2	0.9		2k	Sm'e	Calm	S	0	0	Fair	S. Woods, M. A
*Montreal, Quebec	29.83	757.7	30.03	762.7	67	19.4	86	SW	16	7.2		0	2s		SW	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.45	748.0	30.13	765.3	60	15.6	99	Calm	0	0		0	0			0	0	Clear	Rev. R. Mosley
Peterboro, Ontario	29.37	746.0	30.10	764.5	63.7	17.6	94	Calm			0	0	0			0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario	29.43	747.5	30.11	764.8	63	17.2	94	N	4	1.8		0	0			0	0	Clear	H. Morgan.
Port Hastings, N. S.	29.82	757.4	29.86	758.4	68.3	20.2		W	2	0.9						0.20	5.1	Fine	Peter Grant.
Port Stanley, Ontario	29.47	748.5	30.10	764.5	61	16.1	96	N	2	0.9		0	Haze			0	0	Clear	M. Payne.
*Quebec, Quebec	29.65	753.1	29.96	761.0	69	20.6	85	S	11	4.9			Haze		S	0	0	Hazy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.65	753.1	30.10	764.5	61	16.1	97	NW	6	2.7			10s		NW	0	0	Cloudy	W. H. McIntyre.
St. John, N. B.	29.82	757.4	29.99	761.7	57	13.9	87	Calm	0	0			10k			0.08	2.0		G. Murdock, C. E.
*Sangeen, Ontario	29.40	746.7	30.08	764.0	65	18.3	92	SE	1	0.4		0	Haze			0	0	Hazy	K. Stewart.
Stayner, Ontario			30.10	764.5	65	18.3	94	Calm	0	0		0	0			0	0	Clear	R. J. Cole.
Stratford, Ontario	28.85	732.8	30.11	764.8	57.0	13.9	98	Calm	0	0			Fog			0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.81	757.2	29.84	757.9	69	20.6	76	SW	9	4.0		8k	0	W		0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.73	755.1	30.10	764.5	66	18.9	93	Calm	0	0		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					70.0	21.1	75	NW				0	0			0	0	Fair	John Delany

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

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

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.87	758.7	30.09	764.3	67	19.4	79	Calm	0	0		8c	0	Calm		0	0	Fair	
Alpena, Michigan	29.46	748.3	30.10	764.5	61	16.1	94	NW	4	1.8		0	Fog		Calm	0	0	Fair	
Atlantic City, New Jersey	30.10	764.5	30.12	765.0	70	21.1	100	SE	4	1.8			Fog			0.34	8.6	Foggy	
Augusta, Georgia	29.94	760.5	30.11	764.8	74	23.3	86	SE	2	0.9		0	0			0	0	Clear	
Baltimore, Maryland	30.08	764.0	30.13	765.3	69	20.6	95	E	3	1.3			10s		E	0.51	13.0	Cloudy	
Barnegat, New Jersey	30.10	764.5	30.12	765.0	71	21.7	95	NE	3	1.3			10s; fg		NE	0.25	6.3	Cloudy	
Bismarck, Dakota	27.78	705.6	29.34	745.2	68	20.0	84	E	4	1.8			10s		S	0.01	0.3	Cloudy	
Boise City, Idaho	27.09	688.1	29.67	753.6	48	8.9	100	NW	1	0.4			10n		Calm	0.16	4.1	Light rain	
Boston, Massachusetts	29.93	760.2	30.18	764.0	67	19.4	74	W	8	3.6		4cs	Haze	W		0	0	Fair	
Brackettville, Texas	28.78	731.0	29.76	755.9	78	25.6	86	SE	6	2.7			10ks		SE	0	0	Cloudy	
Breckenridge, Minnesota	28.71	729.2	29.64	752.8	71	21.7	90	SE	21	9.4		2k	0	SE		0	0	Fair	
Brownsville, Texas	29.89	759.2	29.96	761.0	81	27.2	87	SE	2	0.9		2c	8ks	Calm	SE	Inap.	Inap.	Clear	
Buffalo, New York	29.40	746.7	30.08	764.0	69	20.6	95	SW	1	0.4		0	Fog		Calm	0.13	3.3	Clear.	
Burlington, Vermont	29.83	757.7	30.08	764.0	70	21.1	75	S	4	1.8		2c	0	Calm		0.02	0.5	Fair	
Cairo, Illinois	29.72	754.9	30.10	764.5	70	21.1	84	W	2	0.9		5ck	0	N		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.58	677.7	30.18	766.6	62	16.7	82	Calm				0	5ks		SE	1.63	41.4	Fair	
Campo, California																			
Cape Hatteras, N. Carolina	30.02	762.5	30.03	762.7	76	24.4	90	SE	1	0.4		8cs	0	SW		0	0	Fair	
Cape Henry, Virginia	30.06	763.5	30.09	764.3	73	22.8	90	NW	4	1.8			10s		SW	0.04	1.0	Cloudy	
Cape Lookout, N. Carolina	30.08	764.0	30.09	764.3	79	26.1	95	Calm	0	0			10s		SW	0	0	Threatening	
Cape May, New Jersey	30.08	764.0	30.10	764.5	72	22.2	95	SE	2	0.9			10s; fg			0.90	22.9	Foggy	
Charleston, South Carolina	30.05	763.3	30.12	765.0	77	25.0	82	E	5	2.2		8cs	2s	W	Calm	3.00	76.2	Cloudy	
Cheyenne, Wyoming	23.87	606.3	29.81	757.2	53	11.7	73	Calm	0	0		5c	0	SW		0	0	Fair	
Chicago, Illinois	29.39	746.5	30.06	763.5	66	18.9	84	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.41	747.0	30.03	762.7	68	20.0	90	NW	1	0.4		2cs	Fog	Calm	Calm	0	0	Foggy	
Cleveland, Ohio	29.41	747.0	30.11	764.8	66	18.9	84	SE	4	1.8		2k	0	Calm		0.11	2.8	Clear	
Concho, Texas	28.05	712.5	29.67	753.6	72	22.2	75	NE	14	6.3		8cs		NE		0.16	4.1	Cloudy	
Corsicana, Texas	29.57	751.1	30.02	762.5	71	21.7	95	S	6	2.7			10s		Calm	0.06	1.5	Cloudy	
Davenport, Iowa	29.43	747.5	30.04	763.0	67	19.4	79	SE	1	0.4		4k	Haze	SE	Calm	0	0	Fair	
Denison, Texas	29.21	741.9	29.97	761.2	73	22.8	90	SE	6	2.7			10s		S	Inap.	Inap	Threatening	
Denver, Colorado	24.61	625.1	29.83	757.7	55	12.8	68	SW	2	0.9		5c	0	W		0	0	Fair	
Detroit, Michigan	29.43	747.5	30.08	764.0	64	17.8	92	S	2	0.9			Fog		Calm	0	0	Foggy	
Dodge City, Kansas	27.26	692.4	29.42	747.3	70	21.1	79	S	12	5.4		5k	0	S		0	0	Fair	
Dubuque, Iowa	29.35	745.5	30.03	762.7	65	18.3	83	S	3	1.3		0	0			0	0	Clear.	
Duluth, Minnesota	29.28	743.7	29.94	760.5	64	17.8	89	E	4	1.8		0	0			0	0	Clear.	
Eagle Pass, Texas	29.12	739.6	29.83	757.7	78	25.6	82	SE	5	2.2		0	0			0	0	Clear	
Eastport, Maine	29.89	759.2	29.96	761.0	64	17.8	83	SW	2	0.9		10k	Sm'e	W	SW	0	0	Cloudy	
Erie, Pennsylvania	29.39	746.5	30.08	764.0	68	20.0	94	Calm	0	0			Fog			0	0	Foggy	
Escanaba, Michigan	29.43	747.5	30.06	763.5	58	14.4	88	Calm	0	0			Fog		Calm	0	0	Foggy	
Florence, Arizona	28.28	718.3	29.88	758.9	83	28.3	49	S				0	5s		S	0	0	Fair	
Fort Bayard, New Mexico	24.14	613.1	30.14	765.5	50	10.0	86	Calm	0	0		5cs	0	SW		0.02	0.5	Fair	
Fort Craig, New Mexico	25.45	646.4			60	15.6	60	S	6	2.7		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.50	749.3	30.02	762.5	71	21.7	85	SE	3	1.3		2c	0	Calm		0	0	Clear	
Fort Griffin, Texas	28.70	729.0	29.92	760.0	74	23.3	81	SE	4	1.8		2c	2s	Calm	Calm	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.78	731.0	29.85	758.2	70	21.1	90	SE	14	6.3			10s		Calm	0	0	Cloudy	
Fort Sully, Dakota	27.91	708.9	29.44	747.8	74	23.3	72	SE	14	6.3		2c	0	Calm		0	0	Fair	
Galveston, Texas	29.97	761.2	30.01	762.2	82	27.8	83	SE	5	2.2		5k	0	S		0.10	2.5	Fair	
Grand Haven, Michigan	29.47	748.5	30.11	764.8	63	17.2	94	Calm	0	0		Fog	0	Calm		0	0	Foggy	
Indianapolis, Indiana	29.33	745.0	30.09	764.3	62	16.7	94	Calm	0	0		Fog	0			0.12	3.0	Clear	
Indianola, Texas	29.97	761.2	29.99	761.7	82	27.8	83	S	4	1.8		2k	0	S		0.03	0.8	Clear.	
Jacksboro, Texas																			
Jacksonville, Florida	30.07	763.8	30.09	764.3	80	26.7	82	E	2	0.9		0	Haze		SE	0.09	2.3	Hazy	
Keokuk, Iowa	29.40	746.7	29.98	761.5	73	22.8	90	E	4	1.8			8s		E	1.58	40.1	Cloudy	
Key West, Florida	30.00	762.0	30.03	762.7	84.0	28.9	79	E	7	3.1		1cs	0	Calm		0.05	1.3	Fair	
Kittyhawk, North Carolina	30.08	764.0	30.10	764.5	76	24.4	90	E	7	3.1		2ck	2s	NW	Calm	0	0	Fair	
Knoxville, Tennessee	29.14	740.1	30.13	765.3	65	18.3	90	Calm	0	0		2ck	Sm'e	W		0	0	Smoky	
La Crosse, Wisconsin	29.26	743.2	29.98	761.5	66	18.9	73	S	4	1.8		Haze	Haze			0	0	Hazy	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	64	17.8	67	Calm	0	0		2cs	0	SW		0.02	0.5	Fair	
Laredo, Texas					82	27.8	78	SE	6	2.7		10c	0	S		0	0	Cloudy	
Leavenworth, Kansas	29.12	739.6	29.92	760.0	74	23.3	90	S	6	2.7		0	0			0	0	Clear	
Los Angeles, California	29.61	752.1	29.94	760.5	58	14.4	76	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.54	750.3	30.09	764.3	65	18.3	94	NE	1	0.4		0	Fog		N	Inap.	Inap.	Foggy	
Lynchburg, Virginia	29.44	747.8	30.10	764.5	70	21.1	79	NE	4	1.8		5k	1s	SE	N	0.14	3.6	Fair	
Maricopa Wells, Arizona					67	19.4	84	NE				0	2ks		Calm	0.05	1.3	Fair	
Marquette, Michigan	29.32	744.7	29.99	761.7	68	20.0	60	W	16	7.2		0	0			0	0	Clear.	
Mason, Texas	28.34	719.8	30.02	762.5	77	25.0	81	SE	5	2.2		2c	5s	S	S	0	0	Fair	
Memphis, Tennessee	29.78	756.4	30.09	764.3	70	21.1	95	Calm	0	0		0	Fog		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.41	747.0	30.08	764.0	58	14.4	93	S	2	0.9		Haze	Sm'e		S	0.02	0.5	Smoky	
Mobile, Alabama	30.05	763.3	30.09	764.3	75.5	24.2	85	S	5	2.2		1ck	1s	W	Calm	0	0	Fair	
Montgomery, Alabama	29.89	759.2	30.12	765.0	71.5	21.9	78	NE	2	0.9		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	29.06	738.1	30.08	764.0	66	18.9	89	Calm	0	0			Fog			0.39	9.9	Foggy	
Mt. Washington, N. H.	23.98	609.1	30.34	770.6	50	10.0	100	NW	30	13.4			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.61	752.1	30.13	765.3	66	18.9	90	Calm	0	0		0	Haze		Calm	0	0	Clear.	
New Haven, Connecticut	30.00	762.0	30.11	764.8	71	21.7	80	SW	2	0.9		2cs	Haz; fog	Calm	Calm	0	0	Fair	
New London, Connecticut	30.08	764.0	30.12	765.0	68	20.0	94	SW	2	0.9		0	5s		W	0	0	Fair	
New Orleans, Louisiana	29.99	761.7	30.05	763.3	78	25.6	88	NE	5	2.2		4k	5s	Calm	E	1.07	27.2	Cloudy	
Newport, Rhode Island	30.06	763.5	30.11	764.8	66	18.9	100	SW	4	1.8			Fog			0	0	Foggy	
New York, New York	29.97	761.2	30.14	765.5	69	20.6	84	SW	2	0.9		2cs	Fog	Calm		0	0	Fair	
Norfolk, Virginia	30.05	763.3	30.11	764.8	70	21.1	95	E	2	0.9		10k	Fog	S	Calm	0.26	6.6	Cloudy	
North Platte, Nebraska	26.85	682.0	29.26	743.2	69	20.6	75	SE	28	12.5		0	0			Inap.	Inap.	Clear.	
Olympia, Washington Ter.	29.82	757.4	29.86	758.4	54	12.2	93	S	8	3.6			10n		S	0.08	2.0	Light rain	
Omaha, Nebraska	28.81	731.8	29.81	757.2	73	22.8	90	S	7	3.1		2c	0	W		0	0	Clear	
Oswego, New York	29.78	756.4	30.09	764.3	69	20.6	84	SE	3	1.3		2k	0	NW		0	0	Fair	
Pembina, Dakota	28.80	731.5	29.58	751.3	67	19.4	90	SE	7	3.1			10s		SE	0.07	1.8	Cloudy	
Philadelphia, Pennsylvania	30.09	764.3	30.14	765.5	67	19.4	94	NE	7	3.1			10n; fg		NE; Calm	0.33	8.4	Light rain	
Phœnix, Arizona					69	20.6	95	Calm				0	5s		S	0.94	23.9	Fair	
Pike's Peak, Colorado	17.80	452.1	30.01	762.2	29	— 1.7	100	SW	15	6.7			Haze			0.02	0.6	Hazy	
Ploche, Nevada	23.97	608.8	29.74	755.4	37	2.8	62	NW	7	3.1		0	0			Inap.	Inap.	Clear.	
Pittsburg, Pennsylvania	29.28	743.7	30.06	763.5	67	19.4	90	SE	1	0.4		2c	Fog	W	Calm	0	0	Fair	
Port Huron, Michigan	29.44	747.8	30.09	764.3	64	17.8	83	Calm	0	0		0	Sm'e			0	0	Clear.	
Portland, Maine	29.97	761.2	30.02	762.5	70	21.1	84	W	3	1.3		2k	Haze	W		0	0	Fair	
Portland, Oregon	29.95	760.7	30.05	763.3	57	13.9	93	S	8	3.6			10s		Calm	0	0	Cloudy	
Prescott, Arizona					49	9.4	77	Calm				0	0			1.30	33.0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	79	26.1	78	E	4	1.8		5cs	2ks	Calm	Calm	0.35	8.9	Cloudy	
Red Bluff, California	29.64	752.8	30.00	762.0	62	16.7	36	NW	12	5.4		0	0			0	0	Clear.	
Rochester, New York	29.47	748.5	30.06	763.5	69	20.6	84	W	4	1.8		0	Haze		Calm	0.12	3.0	Clear.	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.58	751.3	30.15	765.8	53	11.7	86	Calm	0	0			10s		Calm	0	0	Cloudy	
Sacramento, California	29.89	759.2	29.97	761.2	59	15.0	49	NW	1	0.4		0	0			0	0	Clear	
St. Louis, Missouri	29.51	749.5	30.06	763.5	71	21.7	85	S	4	1.8			10s		Calm	0	0	Cloudy	
St. Marks, Florida	30.06	763.5	30.07	763.8	76	24.4	90	Calm	0	0		0	2ks		Calm	0	0	Fair	
St. Paul, Minnesota	29.07	738.4	29.85	758.2	72	22.2	67	E	6	2.7		1c	0	Calm		0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.58	649.7	29.91	759.7	50	10.0	64	Calm	0	0			10s		Calm	0.44	11.2	Cloudy	
San Antonio, Texas	29.28	743.7	29.84	757.9	79	26.1	82	SE	4	1.8		2ck	2ks	Calm	S	0	0	Fair	
San Diego, California	29.90	759.4	29.97	761.2	59	15.0	81	SE	4	1.8		0	0			0	0	Clear	
Sandusky, Ohio	29.44	747.8	30.10	764.5	67	19.4	84	W	3	1.3		0	Sm'e		Calm	0.04	1.0	Clear	
Sandy Hook, New Jersey	30.11	764.8	30.13	765.3	69	20.6	95	Calm	0	0		10k	Fog	Calm		0	0	Cloudy	
San Francisco, California	29.92	760.0	29.99	761.7	55	12.8	90	SW	1	0.4		Haze	Haze			0	0	Hazy	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	68	20.0	20	SE	14	6.3		Haze	2s		S	0	0	Fair	
Savannah, Georgia	30.01	762.2	30.10	764.5	79	26.1	82	Calm	0	0		5ck	Sm'e	SW		0.31	7.9	Fair	
Shreveport, Louisiana	29.84	757.9	30.05	763.3	76	24.4	86	Calm	0	0		10cs	0	W		0.17	4.3	Cloudy	
Smithville, North Carolina	30.04	763.0	30.08	764.0	72	22.2	90	SE	8	3.6			10s		S	0.74	18.8	Threatening	
Springfield, Massachusetts	29.92	760.0	30.05	763.3	67	19.4	79	Calm	0	0		0	0			0	0	Clear	
Stanwix, Arizona					66	18.9	48	SW				0	0			0.26	6.6	Clear	
Stockton, Texas					73	22.8	85	S	4	1.8		5k	2s	S	S	0	0	Fair	
Thatcher's Island, Mass	30.02	762.5	30.07	763.8	64	17.8	89	SW	8	3.6		5c	0	SW		0	0	Fair	
Toledo, Ohio	29.44	747.8	30.10	764.5	63	17.2	88	Calm	0	0		0	Sm'e		Calm	0.05	1.3	Fair	
Tucson, Arizona	27.45	697.2	30.00	762.0	73	22.8	95	SE				0	10s		SW	0.03	0.8	Threatening	
Tybee Island, Georgia	30.06	763.5	30.09	764.3	75	23.9	90	S	4	1.8		0	2s		Calm	0.46	11.7	Fair	
Umatilla, Oregon	29.53	750.0			59	15.0	57	W	24	10.7			10s		W	0	0	Cloudy	
Vicksburg, Mississippi	29.86	758.4	30.11	764.8	74	23.3	85	Calm	0	0		0	0			0	0	Clear	
Virginia City, Montana	24.04	610.6	29.52	749.8	41	5.6	83	NE	6	2.7		0	5s		Calm	0.30	7.6	Fair	
Visalia, California	29.60	751.8	29.97	761.2	48	8.9	62	S	2	0.9		0	0			0	0	Clear	
Washington, D. C.	30.02	762.5	30.14	765.5	69	20.6	100	NE	6	2.7			Fog			0.33	8.4	Foggy	
Wickenburg, Arizona					59	15.0	66	SE				0	0			0.21	5.3	Clear	
Wilmington, N. Carolina	29.99	761.7	30.06	763.5	71	21.7	100	Calm	0	0			10n		Calm	3.38	85.9	Light rain	
Winnemucca, Nevada	25.63	651.0	29.99	761.7	45	7.2	60	SW	7	3.1		10k	0	N		0	0	Cloudy	
Wood's Holl, Mass	30.10	764.5	30.15	765.8	69	20.6	90	SW	6	2.7		5c	2s	NW	NW	0	0	Fair	
Yankton, Dakota	28.53	724.6	29.74	755.4	72	22.2	85	S	10	4.5		5cs	0	SW		0	0	Fair	
Yuma, Arizona	29.70	754.4	29.86	758.4	66	18.9	23	W	7	3.1		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.06	763.5	30.12	765.0	38.5	3.6	95	SE	3	1.3		Fog	Fog			0	0	Foggy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	84	28.9	79	NE	4.8	2.1		8ck	2ks	SE	Calm	Inap.	Inap.	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	80	26.7	86	Calm	0	0		8c	2s	SE	NW	0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.88	758.9	29.96	761.0	85	29.4		NE			2					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					81	27.2	86	N				2c	2s	Calm		0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.84	757.9	29.86	758.4	84	28.9	83	SE				0	2ks		SE			Clear	L. V. Bigard.
Bridgetown, Barbados, W. I	30.02	762.5	30.04	763.0	81	27.2	78	NE	4	1.8		2cs	8s	Calm		0	0	Cloudy	E. Racker.
Paramaribo, D. Guiana, S. A.			30.01	762.2	83	28.3	79	SE			2	3c	6k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			67.8	19.9	82	Calm			0		8s;ks			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.08	764.0	30.10	764.5	74	23.3		NE			6					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1,750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672 (?) m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,848 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m., Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.97	761.2	58	14.4	58	14.4	94	NW	8	3.6			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.22	767.6			80	26.7	82	N	6	2.7			5			0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.11	764.8	71	21.7	69	20.6	80	W	8	3.6			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.90	759.4	74.5	23.6	73.5	23.1	88	Calm			0		10k; s; sm'e.		WNW	0	0			Cloudy	
Adams, S. 32° 20′, W. 50° 39′	30.21	767.3	65	18 3	60	15.6	76	SE			4		9		SE	Light	Light	Light	SE	D. clouds	
Alert, Yokohama, Japan	30.10†	764.5†	76	24.4	76	24.4	100	SE			1		10		SE			Long	SE	Raining	
Alliance, Constantinople, Turkey	30.28	769.1	70	21.1	71	21.7	49	NNE			3		3		Calm					Pleasant	
Ashuelot, Che-foo, China	29.98	761.5	79	26.1	76	24.4	95	SSW			2		1							D. clouds	
Canonicus, New Orleans, La.	30.08	764.0	55	12.8	78	25.6	91	ENE			1		8							Cloudy	
Colorado, New York, N. Y.	30.12†	765.0†	71	21.7	70	21.1	90	SSE	0.3	0 1			5		S	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	30.30	769.6	73	22.8	72	22.2	85	NNE			5		3		N&W			Smooth		Pleasant	
Essex, N. 34° 17′, W. 20° 55′	30.19	766.8	76	24.4	78	25.6	95	ESE			4		2		S&E	Light	Light	Smooth	S&E	D clouds	
Franklin, Norfolk, Va.	30.12	765.0	69	20.6	72	22.2	95	SW	1.4	0 6			7		SW	4.75	120.7			D. clouds	
Frolic, Bahia, Brazil	30.29	769.4	78	25.6	78	25.6	95	ESE			3		5k		S&E	Blank	Blank	Smooth		D. clouds	
Gettysburg, Naples, Italy	30.00‡	762.0‡			81	27.2	100	S			1		5		Calm	0	0			D. clouds	
Kearsarge, Hong-Kong, China	30.00	762.0			83	28.3	96	S&W			5		5		S&W	0	0	Smooth		D. clouds	
Lackawana, Necah Bay, W. T.	29.95	760.7			55	12.8	80	WSW			2–3		10		E			Ground	N&W	D. clouds	
Marion, Smyrna, Turkey	30.05	763 3	76	24.4	77	25.0	49	N			3		0			0	0	Chop	NE	Blue sky	
Michigan, Buffalo, N. Y.	29.63	752 6	74	23.3	71	21.7	75	S			1		0							Clear	
Monocacy, Yokohama, Japan	29.91	759.7	75	23.9	76	24.4	73	SE			3		10		SE	0	0			D. clouds	
New Hampshire, Port Royal, S. C.	30.30	769.6			74	23.3	90	ENE	7	3.1			7		NW	1.1	28.			D. clouds	
Omaha, Caldera, Chili	30.13	765.3	63	17.2	58.5	14.7	79	Calm	0	0			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.12†	765.0†	68	20.0	65	18.3	89	Var.			1		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.20	767.1	71	21.7	70	21.1	90	ENE			1		8		Calm					D. clouds	
Palos, Wanchow, China	29.99	761.7	83	28.3	79	26.1	82	E			2		4		N&E	Blank	Blank				
Plymouth, New York, N. Y.	30.43	772.9	74	23.3	70	21.1	85	NW			1		7		W					Hazy	
Ranger, Nagasaki, Japan	29.90	759.4			74	23.3	90	SE			2–4		7		Calm					Cloudy	
Rio Bravo, Brownsville, Texas	29.82	757.4			80	26.7	96	SE			1		6		SE					D. clouds	
Santee, Annapolis, Md.	30.21	767.3	72	22.2	70	21.1	95	NE			2		10			1.35	34.3			Overcast	
St. Louis, League Island, Pa	30.07	763.8	69	20.6	68	20.0	95	NE	5	2.2			10		NE	0.45	11.4			Overcast	
Tennessee, Yokohama, Japan	29.90	759.4	77	25.0	78	25.6	73	S&W	2	0.9			9		S&W	0	0	Smooth		D. clouds	
Trenton, Marseilles, France	30.20†	767.1†	75	23.9	75	23.9	86	NNW					1		N&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	30.13	765.3	78	25.6	78	25.6	32	NE			3		0							Blue sky	
Wabash, Boston, Mass.	30.14	765.5	69	20.6	71	21.7	75	W	6	2.7			2		W	0	0			D. clouds	
Wyoming, Washington, D. C.	30.28†	769.1†	74	23.3	72	22.2		N			1		10							Foggy	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio Hong Kong, China.					85	29.4		WSW			1		1		SE			Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

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

WHITE STAR LINE MARINE SERIES.

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

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

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

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

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 34° 29′, E. 138° 45′			29.95†	760.7†	79	26.1		SSW			5		k		NW	Smooth		Squally	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio N. 52° 30′, E. 3° 52′			30.02	762.5	65.5	18.6	73	WSW			5		k		WSW	Rough	WSW	∪. clouds	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

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

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 49° 57′, W. 40° 45′			29.33*	745.0*	59	15.0		WSW			6		4		WSW	Moderate	SW	Clearing	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.04	763.0	76	24.4	82	E	4	1.8		8k	2ks	NW				Cloudy	Capt. James Jorgenson.

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

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

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

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

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 14, 1877.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.11	764.8	80.6	27.0	69	SSE			2		3			0	0	Fair	Michel.
Algiers			30.09	764.2	80.6	27.0	86	N			1		9			0.071	1.8	Hidden	Peter.
La Calle			30.13	765.3	79.5	26.4	81	E			3		5			0	0	Fair	Fleury.
Tunis			30.17	766.3	91.4	33.0		E			4		2			0	0	Clear	Jacques.
Sfax			30.21	767.2	84.2	29.0		SE			2		0			0	0	Clear	Husson.
Saida			30.08	764.1	81.1	27.3		NNE			4		2			0	0	Clear	Millot.
Tebessa			30.15	765.9	77.4	25.2	63	S			2		10			0.197	5.0	Hidden	Bourgeois.
Geriville			30.08	764.1	70.3	21.3	70	SE			3		5			0.276	7.0	Fair	Lemaillot.
Laghouat			30.17	766.4	70.7	21.5	68	SW			4		7			0.157	4.0	Cloudy	François.
Biskra			30.21	767.2	84.9	29.4		SE			2		6			0	0	Fair	Kuntz.

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.61	752.0	30.13	765.4	75.2	24.0	51	SE			1		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.32	744.8	30.07	763.8	67.6	19.8	55	W			4		5			0.004	0.1		Dr. Wierzbiski.
Eperies	29.19	741.5	30.04	763.1	70.5	21.4	63	S			1		6c			0	0		Julius Mikolik.
Gratz	28.93	734.8	30.15	765.8	68.9	20.5	77	S			2		0			0	0		Andreas Rospini.
Hermannstadt	28.70	728.9	30.08	764.0	69.6	20.9	40	NW			3		2			0	0		Prof. Reissenberger.
Kremsmünster	28.81	731.7	30.11	764.9	68.0	20.0	67	NE			1		3			0	0		Prof. C. Wagner.
Lemberg	29.05	737.8	30.01	762.2	64.6	18.1	69	NW			1		7			0.102	2.6		Dr. T. Stanecki.
Pola	30.07	763.6	30.17	766.4	77.5	25.3	55	WNW			3		0			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.86	758.4	30.13	765.3	70.2	21.2	95	Calm			0		0			0	0		Karl Stancel.
Trieste	30.10	764.6	30.21	767.2	75.9	24.4	57	W			1		0			0	0	Clear	P. Busin.
Vienna	29.44	747.7	30.11	764.8	74.3	23.5	79	W			4		1			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.66	728.4	30.15	765.9	66.2	19.0	58	SSW			4		7			0	0		
Brussels	29.87	758.7	30.07	763.7	64.9	18.3	72	SW			6		10		SW	0	0		Royal Observatory
Furnes																			
Maeseyck	29.91	759.8	30.04	763.1	68.7	20.4	99	NNW			6		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.37	746.0	29.47	748.5	60.9	16.1		W	30	13.4			6			0	0	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	29.69	754.1	29.70	754.4	59	15.0		W			5		6					D. clouds	William McNeil.
Armagh, Observatory			29.84	757.9	58.2	14.6		SW	10	4.5			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.89	759.2	57.8	14.3		W	25	11.2			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.87	758.7	57.5	14.2		SW			1		10					Raining	J. Dreyer.
Bradford, Yorkshire	29.45	748.0	29.84	757.9	60.0	15.6		W			4		9			0.20	5.1	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.93	760.2	67.5	19.7		SW			3-4		7					Overcast	H. Todd. [H. C
Cardington			29.95	760.7	68.0	20.0		SW			3		9					Overcast	John McLaren.
Chatham, School M. E	29.83	757.7	29.96	761.0	65.2	18.4		SW			4		3					Blue sky	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.57	725.7	30.03	762 7	57.0	13.9		S			4		10					Rain & fog	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.76	755.9																	J. Mac Gowan.
Dover	29.99	761.7	30.02	762.5	62	16.7		WSW			6		10					Misty	J. Costello.
Eccles, (near Manchester)			29.88	758.9	59.5	15.3		W	8.4	3.8			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.77	756.1	30.00	762.0	62.2	16.8		SW			5		10					Rain & fog	The Staff.
Fort Napier, (Natal)	27.67	702.8	29.90	759.4	63.7	17.6		E			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.92	760.0	85.0	29.4		W			2		4					D. clouds	
Galway, Queen's College			29.51	749.5	59	15.0		WSW			8		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.07	763.8	75.2	24.0		E			6		3					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.46	748.3	29.67	753.6	69.9	16.1		WSW			5		7					D. clouds	D. G. Maclean.
Great Yarmouth	29.88	758.9	29.89	759.2	67	19.4		WNW			5		5					Squally	G. T. Watson.
Greenwich, Royal Obs'y	29.81	757.2	29.97	761.2	66.3	19.1		WSW			3		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.88	758.9	30.10	764.5	66.5	19.2		SW			4		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.00	762.0	62	16.7		S			2		10n			0.19	4.8	Misty	M. P. Moyle.
Holyhead	29.84	757.9	29.89	759.2	58	14.4		WSW			3		10					Drizzling	John Tilston.
Jersey	29.84	757.9	30.12	765.0	66.3	19.1		SW			6		9					Overcast	J. Fisher.
Kew, Observatory			29.98	761.5	65.7	18.7		SW	16	7.2			10k;d					Threatening	The Staff.
Kingstown	29.85	758.2	29.88	758.9	59	15.0		SSE			1		10					Gloomy	George Mitchell.
Leicester, Museum			29.91	759.7	62.8	17.1		SW			3		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.07	763.8	30.14	765.5	80.6	27.0		NE			1		4					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	29.39	746.5	29.48	748.8	60	15.6		WSW			5		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.96	761.0	85.8	29.9		SE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.72	754.9	29.81	757.2	67.3	19.6		WNW			4		7ck		WNW	0.010	.0.25	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.42	747.3	29.94	760.5	60.0	15.6		WSW			3		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.96	761.0	67	19.4		W			2		10					Gloomy	F. Lucas
Plymouth	29.94	760.5	30.01	762.2	62.0	16.7		SW			3		10					Raining	John Merrifield.
Roche's Point	29.84	757.9	29.88	758.9															W. Kennedy.
Saint Ann's Head	29.78	756.4	29.94	760.5	57	13.9		SSW			1		10					Raining	John C. Walker.
Sandwick Manse, (Orkneys)			29.32	744.7	55	12.8		WSW	17	7.6			10					Raining	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey			30.10	764.5	72.5	22.5		NNE			1		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.63	752.6	29.86	758.4	65.3	18.5		SW			4		4			0.938	23.82	Blue sky	W. F. Cooper.
Silloth Rectory	29.74	755.4	29.77	756.1	60.4	15.8	81	W			5		7			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					57.0	13.9		SW			4		10					Squally	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.49	749.0	54	12.2		WNW			6		8					D. clouds	John Smith.
Stratfield Turgiss	29.78	756.4	30.00	762.0	62.5	16.9		W			1		10					Raining	Rev. C. H. Griffith, F.M.S
Thurso			29.35	745.5	55	12.8		WNW			5		10					Raining	John Trotter.
Truro, Royal Institution			29.99	761.7	64	17.8		SW			6		10					Raining	W. Newcombe.
Valencia, Observatory			29.84	757.9	56.4	13.6		SSE	16	7.2			10					Raining	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		W			6		5			0.20	5.1		Henry Mercer.
Cape Good Hope, Obs'y	30.02	762.5	30.06	763 5	61.6	16.4	73	NW	16	7.2		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.22	767.6	48.5	9.2	57	SW			2		8k			0.20	5.1		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.66	753.4	63.0	17.2		W			8		8k			0	0	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.98	761.5	30.17	766.3	74.7	23.7	71	E	18.0	8.0		1	2	Calm	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.41	772.4	30.51	774.9	46.1	7.8	87	W	8	3.6			10			0.13	3.3	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.59	751.6	56	13.3		W			4	5	5	W		0.4	10.		J. Youngclause.
North Unst, (Shetland Is.)			29.37	746.0	53	11.7		NW			2		10					Foggy	Robert Burnet.

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

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria, N. 50° 53′, W. 18° 55′			29.74	755.4	59	15.0		W			1		10	W		*7.5	SW; NNW	Overcast	Capt. W. Watson.
S. S. Batavia, N. 46° 10′, W. 38° 45′			29.65	753.1	69	20.6		SW			4		3			4	W	Blue sky	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 40° 25′, W. 68° 35′			30.08	764.0	66	18.9		W			1		10			0		Foggy	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson

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

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Señor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.22	666.0			68.4	20.2	100	E			2		7cs		E	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.67	753.7	29.72	754.9	58.6	14.8	98	SSW			4		10					Foggy	
Fanöe	29.65	753.2	29.67	753.7	61.0	16.1	88	WSW			6		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.36	745.7	29.40	746.8	48.0	8.9	95	SE			2		10					Raining	
Thorshavn, (Faröe)	29.62	752.3	29.66	753.3	54.3	12.4	82	NE			2		3						
Vestervig	29.39	746.5	29.56	750.8	57.7	14 8	97	SW			6		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.63	752.7	30.19	766 7	66.2	19	64	SW			3		2		W	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bouvarne, Director.
Avignon, Normal School	30.09	764.3	30.17	766 3	78.6	25.9	49	N			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.64	752.9	30.19	766.9	72.1	22.3	45	SW			2	2c		SW		0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.87	758.7	30.15	765.8	68.0	20	66	SSW			3		5		WSW	0	0	Cloudy	Normal School.
Besançon	29.37	746.0	30.26	768 6	67.6	19.8	66	SW			1		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.41	747.1	30.35	770.8	71.6	22	96	W			1		0			0	0	Clear	Normal School.
Bourges, Normal School	29.65	753.1	30.19	766.9	66.9	19.4	68	S			1		5		S	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.84	758.0	30.06	763.5	65.7	18.7	82	SW			4		10		SW	0	0		The Staff.
Carcassonne, Normal School	29.77	756.1	30.17	766.4	86.0	30	53	E			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoullié, Director.
Châlons sur-Marne, N. Sch'l	29.88	758.9	30.19	766.8	73.4	23.0	50	SW			3		5k		SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D.Obs.	28.85	732.8	30.15	765.9	74.7	23.7	42	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.34	745.2	30.20	767.0	69.4	20.8	64	W			4		2		W	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.13	740.0	30.28	769.0	82.6	28.1	40	NW			2		0			0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.05	763.2	30.26	768.6	67.8	19.9	64	NE			2		5		NE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.91	759.6	30.21	767.3	67.5	19.7	68	W			2		8		W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.34	745.2	30.24	768.0	67.3	19.6	73	NW			1		0			0	0	Clear.	Pin, Director.
Lorient, Naval Observatory	30.09	764.2	30.19	766.7	69.8	21.0	71	SW			4		2		S	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.51	749.6	30.19	766.8	68.2	20.1	98	E			6		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.26	743.2	30.29	769.4	63.5	17.5	71	S			1		2		SW	0	0	Slightly cl'dy	Normal School
Nismes, Normal School	29.76	755.8	29.95	760.7	86.9	30.5	39	N			2		0			0	0	Clear	Royer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.93	760.3	30.17	766.3	69.8	21.0	56	SW			2	4c		NW		0	0	Cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.15	765.9	30.19	766.7	77.0	25.0	61	S			1		5		S	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.04	763.0	30.13	765.2	72.9	22.7	56	SSW			2		5		SW	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.15	740.4	30.23	767.7	87.1	30.6	43	NW			1		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.3	29.80	757.0	82.4	28										0.59	15.		L'Abbé Marchési.
Marseilles, Observatory			30.20	767.1	76.6	24.8	69	SW			1		0			0	0		The Staff.
Mont-Louis	23.17	639.2	30.48	774.2	64.4	18.0	40	SE	7.4	3.33			2		NW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.89	759.1	30.16	766.1	70.2	21.2	60	SW			3	7c		WSW		0	0		Marié Davy, Director.
Perpignan			30.22	767.5	75.4	24.1	51	SE	9.3	4.17			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.55	547.3			53.8	12.1		SW			2		6					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.81	579.3			57.6	14.2		S			2		6			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.00	761.9	30.16	766.1	71.1	21.7	58	SW			2-3		3	WNW		0	0		E. Renou.
Toulouse, Observatory	29.50	749.3	30.23	767.8	78.6	25.9	39	NE			1		0			0	0		The Staff.
Tours	29.91	759.6	30.10	764.6	72.1	22.3	64	W			2		10		WNW	0	0		C. Marquet.
Versailles, (near Paris)			30.18	766.6	69.4	20.8	61	SW			2		5			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.94	760.4	29.96	761.0	68.0	20.0	95	ESE	5.6	2.5			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.81	757.2	29.98	761.5	65.5	18.6	76	S			2		8			0.040	1.02		Prof. Arndt.
Breslau	29.56	750.7	30.09	764.2	66.9	19.4	51	W			4		10			0	0		Royal University Obs'y.
Carlsruhe	29.74	755.3	30.15	765.9	70.2	21.2	61	SW			3		7			0	0		Albert Senz.
Cassel	29.49	749.0	30.10	764.5	71.6	22.0	58	SW			6		3	W		0	0		Dr. H. Möhl.
Crefeld	29.87	758.6	30.03	762.7	70.3	21.3	61	W			6		8			0	0		Director Lose.
Emden	29.80	757.0	29.84	757.9	65.3	18.5	78	W			7		10			0.114	2.9		Prof. Prestel.
Frankfort on the Main	29.80	756.8	30.15	765.8	72.5	22.5	40	SW			2		6			0	0		Physical Society.
Friedrichshafen	28.81	731.7	30.23	767.7	65.1	18.4	80	SW			2		0			0	0		M. Wilhelm.
Hamburg	29.83	757.7	29.90	759.5	60.6	15.9	92	WSW			6		10			0.209	5.3	Squally	Captain F. Hegemann.
Kiel	29.78	756.4	29.80	756.9	62.4	16.9	88	SW			3		10			0.448	11.37		Prof. G. Karsten.
Königsberg, (Prussia)	29.80	756.9	29.87	758.7	58.6	14.8	89	W			2								Prof. E. Luther.
Köslin			29.90	759.4	57.0	13.9		SW			4		5			0.331	8.4		H. Müller.
Leipsic, Observatory	29.65	753.2	30.07	763.6	70.9	21.6	54	WSW			4		8	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.84	757.8	29.88	759.0	59.5	15.3	80	W			4		7c;ks	NW					Reinbrecht von Skalweit.
Neufahrwasser	29.89	759.1	29.90	759.5	59.4	15.2	90	SSW			1		10	WSW		0.118	3.0	Showery	A. Lothes.
Posen	29.75	755.6	30.04	763.0	62.2	16.8	76	W			8		10			Blank	Blank		Dr. Magener.
Strassburg Obs., (in Alsace)	29.66	753.3	30.19	766.9	72.3	22.4	54	S			3		2	W		0	0		Dr. Schur.
Stuttgart	29.22	742.2	30.14	765.6	71.2	21.8	53	W			1		2	W		0	0		Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.68	728.5	30.15	765.7	69.8	21.0	43	W			1		6	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.88	758.9	29.92	760.0	60.1	15.6	89	SW			2		10			Blank	Blank		E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.73	755.2	30.11	764.8	79.5	26.4		NE										Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.75	755.6	29.80	756.9	83.7	28.7	71	WSW	32.0?	14.3?			7		WSW	0	0	D. clouds	
Deesa																			
Bombay	29.86	758.5	29.90	759.4	83.9	28.8	74	WNW	9.0	4.0			10	SW	WNW	0	0	Misty	
Poona	27.79	705.8	29.78	756.3	80.8	27.1	63	NW					6	NW	W	0	0	D. clouds	
Lahore	28.89	732.7	29.61	752.0	96.2	35.7	30	E	2.1	0.9			0			0	0	Blue sky	
Belgaum	27.40	695.9	29.96	760.9	73.4	23.0	87	W	6.0	2.7			7		W	0	0	D. clouds	
Bangalore																			
Roorkee	28.74	730.0	29.61	752.0	95.2	35.1	23	NW	3.4	1.5						0	0	Strong wind	
Agra	29.11	739.3	29.65	753.1	98.7	37.1	25	W								0	0		
Trichinopoly																			
Nagpur	28.78	731.0	29.82	757.4	80.9	27.1	71	N	3.4	1.5			9			0	0	Gloomy	
Madras																			
Lucknow	29.27	743.5	29.63	752.6	95.6	35.3	33	NW	6.0	2.7			2		E	0	0	D. clouds	
Allahabad	29.38	746.3	29.69	754.0	90.7	32.6	51	Calm	4.5	2.0			8		SE	0	0	D. clouds	
Patna	29.52	749.7	29.69	754.2	88.8	31.5	62	WSW	0.6	0.3			4	SW	SW	0	0	D. clouds	
Hazaribagh	27.75	704.9	29.75	755.7	79.6	26.4	82	WNW	6.9	3.1			0			0	0	Misty	
Cuttack	29.69	754.2	29.78	756.3	85.0	29.4	69	SW	4.5	2.0			6			0	0	D. clouds	
Calcutta (Alipore)	29.74	755.5	29.77	756.0	79.5	26.4	93	W	3.0	1.3			3	SE		0.15	3.8	Raining	
Goalpara	29.33	745.0	29.72	754.9	77.7	25.4	89	Calm	1.1	0.5			1			0.53	13.5	D. clouds	
Chittagong	29.72	755.0	29.82	757.3	81.4	27.4	89	SW	7.4	3.3			4			0	0		
Sibsagar	29.42	747.3	29.76	755.8	80.5	26.9	89	WSW	3.1	1.4			10	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.43	722.1	29.79	756.5	83.5	28.6	67	NW	4.7	2.1			2	NW		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.53	572.2	30.21	767.4	51.3	10.7	90	NNW			1		6	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.43	569.7	30.16	766.0	51.8	11.0		WNW			1		2	E		0	0		Signora Ernesta Manfredi.
Udine	29.77	756.2	30.17	766.4	75.9	24.4	45	Calm	0	0			2			0	0		Prof. Giovanni Clodig.
Padua	30.07	763.6	30.17	766.3	76.1	24.5	47	NE	0	0			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.97	761.3	30.16	766.0	78.3	25.7	42	SE	1.8	0.8			1			0	0		Conte Alm. Da Schio.
Verona	29.88	759.0	30.10	764.4	83.8	28.8	46	SSE			1		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.90	734.0	30.17	766.4	77.4	25.2	48	S			1		0			0	0		Prof. Trionfini Carlo.
Domodossola	29.15	740.4	30.14	765.5	75.9	24.4	58	S			6		2			0	0		Prof. Giuseppe Calza.
Milan	29.68	753.8	30.17	766.4	82.4	28.0	51	ESE			1		1			0	0		Ab. Gio. Capelli.
Pavia	29.85	758.1	30.18	766.6	77.4	25.2	53	NE			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.30	744.1	30.17	766.3	79.5	26.4	45	SSW	1.8	0.8			4			0	0		Prof. P. F. Denza.
Mondovi	28.32	719.2	30.15	765.8	76.6	24.8	48	NNW			2		7	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.97	761.1	30.18	766.6	76.6	24.8	63	S			2		2			0	0		Prof. L. Vassallo.
Genoa	30.03	762.7	30.19	766.9	77.7	25.4	55	SW	3.8	1.7			0			0	0		Prof. G. M. Garibaldi.
Placenza	29.94	760.4	30.19	766.7	78.4	25.8	49						0			0	0		Dott. G. Manzi.
Parma	29.84	758.0	30.15	765.8	81.1	27.3	54	NW			2		1	NW		0	0		Prof. P. Pigorini.
Florence	29.94	760.4	30.18	766.6	82.4	28.0	34	NE			2		1			0	0		Cav. F. Meucci.
Leghorn	30.08	764.1	30.17	766.2	76.6	24.8	64	W	8.1	3.6			2			0	0		Prof. P. Monte.
Siena	29.00	736.6	30.16	766.0	81.5	27.5	32	W	0	0			2	W		0	0		Prof. L. Toscani.
Urbino	28.64	727.4	30.16	766.0	73.0	22.8	43	NE			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.16	766.0	30.21	767.2	74.3	23.5	84	N	16.1	7.2			0			0	0		Prof. Luigi Guidi.
Ancona	30.08	763.9	30.18	766.5	76.3	24.6	47	N			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.10	764.6	30.21	767.3	80.2	26.8	57	WSW			4		3	S		0	0		Avv. P. Ponticelli.
Rome	30.00	762.0	30.17	766.3	82.9	28.3	51	W	4.3	1.9			0			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.99	761.8	30.19	766.7	84.2	29.0	48	SW			2		1	ENE		0	0		Prof. L. Palmieri.
Lecce	29.91	759.8	30.16	766.0	74.3	23.5	43	N	9.4	4.2			1			0	0		Prof. C. DeGiorgi.
Cosenza	29.31	744.5	30.16	766.1	81.0	27.2	47	NNE	0.7	0.3			2	ENE		0	0		Prof. F. D. Conti.
Cagliari	29.93	760.1	30.11	764.8	82.4	28.0	57	SE			4		5			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.02	762.4	30.07	763.6	82.0	27.8	52	SE			2		7	SE		0	0		Prof. F. Cafiero.
Palermo	29.88	759.0	30.13	765.2	79.5	26.4	64	NE	8.1	3.6			7			0	0		Prof. G. Cacciatore.
Caltanissetta	28.23	717.1	30.09	764.3	79.2	26.2	43	NW			1		3	S		0	0		Prof. A. Pagani.
Syracuse	30.02	762.4	30.09	764.3	80.6	27.0	63	NE			1		3	NW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.66	753.3	30.21	767.4	82.0	27.8	50	WNW	2.5	1.1			2	NE		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokio, Japan.

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.64	752.8	29.72	754.8	69	20.6	100	Calm	0	0			10n			3.26	82.8		Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico.

Mexico, Central Obs'ry	23.09	586.6	30.08	764.1	57.6	14.2	88	NW	0.8	0.38		0	8k		N	Inap.	Inap.	Cloudy	Mariano Bárcena. Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.03	762.7	30.03	762.7	65.5	18.6		SW			5					0.035	0.9		
Groningen	29.84	757.8	29.89	759.2	63.7	17.6		SW			5					0.122	3.1		
Helder	29.88	759.0	29.88	759.0	64.2	17.9		SW			5					0.106	2.7		
Utrecht	29.96	760.9	30.00	762.1	61.3	16.3	94	SSW			4		10			0.035	0.9	Dull	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Bergen	29.33	744.9	29.37	746.1	56.8	13.8	94	SSE	3.8	1.7			4			0.394	10.0		
Brönö	29.59	751.5	29.63	752.5	59.7	15.4	59	NNE	9	4			7			0	0		
Christiania	29.45	748.1	29.60	751.8	54.3	12.4	88	ENE	4	2			10			0	0		
Tromsö	29.69	754.2	29.74	755.3	46.8	8.2	62	Calm	0	0			0			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.78	756.5	29.97	761.3	70.3	21.3	87	W	3.8	1.7			5			0.650	16.5		Dr. J. A. Sampaio
Campo Major	29.12	739.7	30.09	764.3	86.4	30.2	38	ESE	8.1	3.6			2			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.05	763.2	30.13	765.4	75.4	24.1	56	SE	3.8	1.7			7			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.76	756.0	30.11	764.8	79.5	26.4	39	NE	9.9	4.4			0			0	0		The Staff.
Ponta Delgada, (Azores)	29.94	760.5	30.01	762.3	74.1	23.4	83	SE					10			0.185	4.7		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India N. 38° 16′, W. 22° 28′.			30.08	764.0	73.4	23.0	83	SSW			5		9	S	S	6	S	Gloomy	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.58	751.4	30.00	762.0	60.3	15.7	87	WNW	4	2			10					Raining	Astronomical Obs.
Wilna	29.47	748.4	29.88	758.9	57.7	14.3	85	SW	2	1			10					Raining	Astronomical Obs.
Dorpat	29.49	749.1	29.73	755.1	59.4	15.2	75	WSW	9	4			9						Physical Cabinet.
St. Petersburg	29.70	754.3	29.71	754.7	51.4	10.8	87	ENE	9	4			10						Central Physical Obs.
Kuopio	29.45	747.9	29.77	756.1	45.9	7.7	90	NE	7	3			0						Ch. Forsten.
Kieff	29.28	743.8	29.91	759.7	57.0	13.9	97	NW	13	6			8					Light rain	Physical Cabinet.
Nikolaiev	30.04	763.0	30.11	764.8	66.9	19.4	58	SW	4	2			10						Kurdakof.
Kertch	29.89	759.1	29.91	759.6	66.7	19.3	77	SW	4	2			10						Lagorio.
Moscow	29.25	743.0	29.80	756.9	52.9	11.6	96	WSW	9	4			10					Raining	Meteorological Obs
Lugan	29.84	757.8	30.04	762.9	65.1	18.4	38	SSW	9	4			7						Meteorological Obs.
Archangel	29.63	752.6	29.65	753.1	43.3	6.3	83	NW	29	13			7						Ogorodnikof.
Tiflis	28.69	728.8	30.09	764.3	66.0	18.9	54	NW	4	2			6						Physical Observatory.
Astrakhan	30.19	766.9	30.11	764.8	67.1	19.5	42	ENE	2	1			8						Sebastianof.
Kasan	29.55	750.6	29.82	757.4	56.1	13.4	62	SW	7	3			10						Physical Cabinet
Orenburg																			Tschernischei.
Ekaterinburg	28.85	732.9	29.80	756.9	47.7	8.7	76	WSW	4	2			6						Meteorological Obs.
Nukuss	29.66	753.4	29.89	759.3	66.4	19.1	68	N	13	6			9						
Kasaly																			Bobrof.
Tashkend	28.28	718.2	29.91	759.8	72.7	22.6	86	Calm	0	0			0						Michelson.
Barnaul	29.35	745.4	29.86	758.4	58.5	14.7	67	NW	0	0			7						Meteorological Obs.
Yeniseisk	29.41	747.0	29.56	750.7	54.1	12.3	85	E	9	4			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.79	756.7	29.93	760.3	68.9	20.5	58	Calm	0	0			2						Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					53.6	12.0	95	Calm	0	0			7						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez
Madrid, Royal Observatory	27.99	711.0			79.3	26.3	46	E	5.2	2.33		0	2			0	0	Partly cl'dy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.4	29.98	761.5	80.2	26.8	84	Calm	0	0		3c;cs	1k	NNW		0.028	0.7	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.98	761.4	30.07	763.8	84.6	29.2	47	E	28.3	12.7		0	3		E	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.86	758.5	83.5	28.6	88	S				1s	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published: wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Haparanda	29.86	758.4	29.90	759.4	46.4	8.0	57	NE			2		0			0	0		
Umea	29.77	756.2	29.82	757.5	50.0	10.0	62	E			4		1			0	0		
Hernosand	29.74	755.3	29.79	756.6	51.8	11.0	80	ENE			4		10			0	0		
Stockholm	29.53	750.0	29.71	754.5	58.3	14.6	68	Calm			0		4			0	0		
Wisby	29.73	755.2	29.79	756.7	60.4	15.8	73	WNW			4		5			0	0		
Sub-Series.																			
Upsala	29.64	752.9	29.72	754.8	52.0	11.1	91	S	6.3	2.8			10		NW	0.036	0.92		Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.82	731.9	30.20	767.0	69.4	20.8	57	N			1		0			0	0	Clear	The Observatory.
Zurich	28.61	726.7	30.20	767.0	69.8	21.0	70	NW			1		1			0	0	Clear	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +4.8 mm; Thermometer, +2.5 cent.; Relative Humidity, —5 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			30.15	765.8	70.3	21.3	49	NE	9	4.0			2		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.25	768.3	78.3	25.7		S			1		0						B. Stéfanidès.
Valona			30.24	768.2	76.1	24.5		NW			2		0			0	0	Clear	A. Bertrand.
Varna			30.04	763.0	78.8	26.0		E			2		0						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.79	756.7	29.90	759.5	80.1	26.7	47	N			4		0			0	0		Prof. C. V. A. Van Dyck.

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B	29.96	761.0	30.03	762.7	55.4	13.0	70	NW	3	1.3			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.11	764.8	70	21.1		Calm	0	0		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B			30.05	763.3	53	11.7	79	NW	1	0.4		2c	0	NW		0.03	0.8	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.00	762.0	59	15.0	54	NW	14	6.3		5cs	0	Calm		0.040	1.02	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.90	759.4	30.08	764.0	64.5	18.1	82	E			1	0	Haze			0	0	Hazy	James Smith, M. A.
Dalhousie, N. B	30.02	762.5	30.05	763.3				W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.97	761.2	30.02	762.5	54.2	12.3	97	SW				0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.13	765.3	47	8.3	81	Calm	0	0		5k	2s	NW	NW	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.02	762.5	30.09	764.3	57.0	13.9	76	NW	1	0.4		0	0			0.265	6.73	Clear	Prof. Harrison.
*Fort Garry, Manitoba			29.48	748.8	60	15.6	99	W	11	4.9		5k	8n	W	W	0.300	7.62	Cloudy	James Stewart.
Goderich, Ontario	29.34	745.2	30.11	764.8	66.1	18.9	84	Calm			0	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	29.04	737.6	30.12	765.0	61	16.1	100	Calm			0	0	0			0	0	Clear	James Grant.
*Halifax, N. S	29.85	758.2	29.98	761.5	61	16.1	81	N	5	2.2		0	0			0.091	2.31	Clear	F. Allison, M. A.
Hamilton, Ontario	29.79	756.7	30.15	765.8	65.7	18.7	81	W			1	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.67	753.6	29.69	754.1	54	12.2	61	N			3	2k	4ks			0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.79	756.7	30.15	765.8	64	17.8	95	N	5	2.2		10c	Fog	Calm	N	0	0	Foggy	S. Woods, M. A
*Montreal, Quebec	29.91	759.7	30.11	764.8	65	18.3	65	NE	7	3.1		0	Haze			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.45	748.0	30.13	765.3	59	15.0	99	E	1	0.4		0	0			0	0	Clear	Rev. R Mosley
Peterboro, Ontario	29.39	746.5	30.13	765.3	61.7	16.5	94	Calm			0	0	0			0	0	Hazy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.45	748.0	30.13	765.3	60	15.6	100	N	6	2.7		0	0			0	0	Clear	H. Morgan.
Port Hastings, N. S	29.90	759.4	29.94	760.5	60	15.6		W	3	1.3						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.48	748.8	30.12	765.0	60	15.6	99	N	4	1.8		0	Haze			0	0	Clear	M. Payne.
*Quebec, Quebec	29.80	756.9	30.12	765.0	61	16.1	77	E	1	0.4		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.68	753.9	30.14	765.5	56	13.3	100	Calm	0	0			Fog			0	0	Foggy	W. H. McIntyre.
St. John, N. B	29.90	759.4	30.07	763.8	57	13.9	87	Calm	0	0		0	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.40	746.7	30.08	764.0	65	18.3	94	Calm	0	0		0	0			0	0	Clear	K. Stewart.
Stayner, Ontario			30.09	764.3	63	17.2	88	Calm	0	0		0	0			0	0	Clear	R. J. Cole.
Stratford, Ontario	28.85	732.8	30.11	764.8	59.2	15.1	98	Calm	0	0		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	29.91	759.7	29.94	760.5	60	15.6	61	NW	6	2.7		2c	2ks		NW	0.06	1.5	Clear	T. C. Hill.
*Toronto, Ontario	29.76	755.9	30.13	765.3	67	19.4	81	N	1	0.4		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					53.0	11.7	93	N				10k	10s			0.03	0.8	Fair	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.88	758.9	30.10	764.5	68	20.0	75	Calm	0	0		0	Fog		Calm	0	0	Fair	
Alpena, Michigan	29.42	747.3	30.05	763.3	63	17.2	94	Calm	0	0		0	Fog		Calm	0	0	Fair	
Atlantic City, New Jersey	30.06	763.5	30.08	764.0	72	22.2	100	Calm	0	0		5c	2s	SE	NE	0	0	Cloudy	
Augusta, Georgia	29.85	758.2	30.03	762.7	71	21.7	85	NE	4	1.8			10s		NE	0	0	Cloudy	
Baltimore, Maryland	30.04	763 0	30.08	764.0	70	21.1	90	NE	4	1.8		5c	2s	NE	NE	0.05	1.3	Fair	
Barnegat, New Jersey	30.06	763.5	30.08	764.0	71	21.7	95	NE	1	0.4			Fog		NE	0	0	Dense fog	
Bismarck, Dakota	27.84	707.1	29.43	747.5	58	14.4	64	W	6	2.7		Haze	8s		S	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.30	693.4	29.95	760.7	43	6.1	83	Calm	0	0		0	5s		Calm	0.10	2.5	Fair	
Boston, Massachusetts	29.93	760.2	30.08	764.0	73	22.8	71	N	5	2.2		1cs	Sm'e	Calm		0	0	Fair	
Brackettville, Texas	28.76	730.5	29.74	755.4	78	25.6	82	SE	4	1.8		5ck	2ks	Calm	E	0	0	Cloudy	
Breckenridge, Minnesota	28 56	725.4	29.49	749.0	65	18.3	100	SW	4	1.8			10ks		SW	0.61	15.5	Cloudy	
Brownsville, Texas	29.80	756.9	29.87	758.7	75	23.9	95	Calm	0	0		0	Fog			0	0	Foggy	
Buffalo, New York	29.41	747.0	30.10	764.5	65	18.3	89	Calm	0	0		0	Fog		Calm	0	0	Clear	
Burlington, Vermont	29.84	757.9	30.10	764.5	67	19.4	84	Calm	0	0		0	Haze			0	0	Hazy	
Cairo, Illinois	29.66	753.4	30.04	763.0	73	22.8	81	SE	2	0.9		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26 87	682.5	30.37	771.4	50	10.0	32	Calm				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.96	761.0	29.97	761.2	74	23.3	90	E	8	3.6		2cs	8s	SW	E	0.07	1.8	Cloudy	
Cape Henry, Virginia	30.01	762.2	30.03	762.7	73	22.8	90	NE	13	5.8			10s		NE	0.71	18.0	Cloudy	
Cape Lookout, N. Carolina	30.02	762.5	30.02	762.5	74	23.3	95	NE	16	7.2			10n		NE	0.90	22.9	Light rain	
Cape May, New Jersey	30.05	763.3	30.08	764.0	71	21 7	95	NE	6	2.7			10n		E	Inap.	Inap.	Light rain	
Charleston, South Carolina	29.96	761.0	30.02	762.5	75	23.9	81	W	4	1.8		1c	2s	W	SW	0.01	0.3	Fair	
Cheyenne, Wyoming	23.92	607.6	29.86	758.4	47	8.3	42	W	12	5.4		0	1s		Calm	0.02	0.5	Clear	
Chicago, Illinois	29.33	745.0	29.99	761.7	67	19.4	79	S	2	0.9		2k	0	SW		0	0	Fair	
Cincinnati, Ohio	29.38	746.2	30.00	762.0	65	18 3	90	E	1	0.4			Fog		Calm	0	0	Foggy	
Cleveland, Ohio	29.42	747.3	30.13	765.3	63	17.2	83	E	3	1.3		0	0			0	0	Clear.	
Concho, Texas	28.00	711.2	29.61	752.1	70	21.1	75	SW	12	5.4		8cs		SW		0.63	16.0	Cloudy	
Corsicana, Texas	29.48	748.8	29.93	760.2	75	23.9	95	SE	7	3.1			10s		Calm	Inap.	Inap.	Cloudy	
Davenport, Iowa	29.31	744.5	29.92	760.0	71	21.7	85	Calm	0	0		0	0			0	0	Clear.	
Denison, Texas	29.14	740.1	29.90	759.4	74	23.3	90	S	10	4.5		2k	0	S		0.01	0.3	Fair	
Denver, Colorado	24.68	626.9	29.90	759.4	53	11.7	66	W	8	3.6		0	5s		Calm	0	0	Fair	
Detroit, Michigan	29.43	747.5	30.08	764.0	64	17.8	89	W	1	0.4			Fog		Calm	0	0	Foggy	
Dodge City, Kansas	27.19	690.6	29.35	745.5	69	20.6	84	S	18	8.0		5k	0	SW		0.01	0.3	Fair	
Dubuque, Iowa	29.21	741.9	29.87	758.7	71	21.7	85	S	4	1.8		2k	0	S		0	0	Fair	
Duluth, Minnesota	28.99	736.3	29.62	752.3	73	22.8	85	W	5	2.2			10ks		S	0.04	1.0	Threatening	
Eagle Pass, Texas	29.11	739.4	29.82	757.4	77	25.0	86	SE	4	1.8		2cs	2s	SE	Calm	0	0	Fair	
Eastport, Maine	29.99	761.7	30.05	763.3	60	15.6	70	NW	6	2.7		0	0			0	0	Clear.	
Erie, Pennsylvania	29.39	746.5	30.08	764.0	67	19.4	90	Calm	0	0		0	Sm'e			0	0	Clear.	
Escanaba, Michigan	29.31	744.5	29.92	760.0	66	18 9	89	S	8	3.6		2c	2s	S	S	0	0	Fair	
Florence, Arizona	28.42	721.9	30.02	762.5	70	21.1	52	NW				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.10	612.1	30.10	764.5	40	4.4	40	NW	8	3.6		0	0			0.01	0.3	Clear	
Fort Craig, New Mexico	25.53	648.4			53	11.7	53	E	4	1 8		0	0			0.02	0.5	Clear	
Fort Gibson, Indian Ter.	29.35	745.5	29.86	758 4	74	23.3	85	SE	4	1.8		5bs	2s	SW	Calm	0	0	Fair	
Fort Griffin, Texas	28.63	727.2	29.87	758.7	76	24.4	82	S	8	3.6		0	5s		Calm	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.66	728.0	29.72	754.9	69	20.6	94	SW	5	2.2			10s		SW	1.01	25.7	Cloudy	
Fort Sully, Dakota	27.97	710.4	29.54	750.3	61	16.1	66	NW	3	1.3			10s		Calm	0.07	1.8	Cloudy	
Galveston, Texas	29.88	758.9	29.92	760.0	83	28.3	79	SE	6	2.7		2k	0	SE		0	0	Fair	
Grand Haven, Michigan	29.41	747.0	30.04	763.0	63	17.2	88	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Indianapolis, Indiana	29.29	744.0	30.05	763.3	64	17.8	89	NE	1	0.4		0	Sm'e			0	0	Clear	
Indianola, Texas	29.90	759.4	29.92	760.0	83	28.3	83	SE	3	1.3		5k	0	S		0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	29.98	761.5	30.00	762.0	75	23.9	90	E	6	2.7		0	Haze		NW	0.07	1.8	Hazy.	
Keokuk, Iowa	29.28	743.7	29.86	758.4	74	23.3	81	S	4	1.8		0	0			0	0	Clear	
Key West, Florida	29.91	759.7	29.95	760.7	84.0	28.9	75	SE	6	2.7		2cs	1ks	SE	SE	0	0	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.04	763.0	73	22.8	100	NE	6	2.7		0	5ks		NE	1.04	26.4	Fair	
Knoxville, Tennessee	29.06	738.1	30.04	763.0	63	17.2	88	NE	3	1.3		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.09	738.9	29.78	756.4	73	22.8	85	S	12	5.4		0	0			0	0	Clear	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	64	17.8	47	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					81	27.2	74	SE	2	0.9		5c	0	Calm		0	0	Fair	
Leavenworth, Kansas	28.99	736.3	29.79	756.7	72	22.2	90	S	8	3.6		2c	5k	Calm	S	0	0	Cloudy	
Los Angeles, California	29.62	752.3	29.96	761.0	57	13.9	53	E	5	2.2		0	0			0	0	Clear.	
Louisville, Kentucky	29.51	749.5	30.06	763.5	65	18.3	94	N	3	1.3		Haze	Fog	Calm	N	0	0	Foggy	
Lynchburg, Virginia	29.42	747.3	30.07	763.8	71	21.7	75	NW	4	1.8			10s		W	0.04	1.0	Cloudy	
Maricopa Wells, Arizona					51	10.6	71	Calm				0	0			0	0	Clear.	
Marquette, Michigan	29.90	741.7	29.86	758.4	68	20.0	69	S	16	7.2		2c	0	Calm		0	0	Clear	
Mason, Texas	28.30	718.8	30.00	762.0	75	23.9	90	S	5	2.2		5c	2s	S	S	0	0	Fair	
Memphis, Tennessee	29.70	754.4	30.01	762.2	73	22.8	85	NE	2	0.9		0	Fg.;sm.		Calm; NE	0	0	Clear	
Milwaukee, Wisconsin	29.36	745.7	30.02	762.5	68	20.0	79	SE	6	2.7		2c	2ks	Calm	SW	0	0	Fair	
Mobile, Alabama	29.96	761.0	30.00	762 0	75	23.9	83	S	4	1.8		0	Haze			0	0	Clear	
Montgomery, Alabama	29.80	756.9	30.03	762.7	73	22.8	78	NE	2	0.9		2ck	Haze	Calm	Calm	0	0	Fair	
Morgantown, West Virginia	29.05	737.9	30.07	763.8	66	18.9	90	Calm	0	0		5c	Fog	W		0.18	4.6	Foggy	
Mt. Washington, N. H.	24.02	610.1	30.38	771.6	49	9.4	100	NW	20	8.9			Fog		NW	0.10	2.5	Foggy	
Nashville, Tennessee	29.54	759.3	30.06	763.5	66	18.9	90	Calm	0	0		0	Haze		Calm	0	0	Clear.	
New Haven, Connecticut	29.96	761.0	30.07	763.8	74	23.3	79	NW	2	0 9		2cs	Fog	Calm	Calm	0	0	Fair	
New London, Connecticut	30.03	762.7	30.08	764.0	74	23.3	76	NW	1	0.4		0	2s;hz		Calm	0	0	Fair	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	81	27.2	82	E	5	2.2		0	0			Inap.	Inap.	Clear.	
Newport, Rhode Island	30.02	762.5	30.07	763.8	70	21.1	84	NW	1	0.4		8c	0	Calm		0	0	Fair	
New York, New York	29.92	760.0	30.09	764.3	69	20.6	90	NW	1	0.4		5ck	Fog	Calm	Calm	0	0	Fair	
Norfolk, Virginia	29.99	761 7	30.05	763.3	71	21.7	100	E	3	1.3		10s	Fog	Calm	Calm	1.52	38.6	Cloudy	
North Platte, Nebraska	26.89	683.0	29 36	745.7	58	14.4	73	NE	8	3.6			10s		NW	0.04	1.0	Cloudy	
Olympia, Washington Ter.	30.05	763.3	30.09	764.3	54	12.2	93	S	6	2.7			10s		Calm	0.04	1.0	Cloudy	
Omaha, Nebraska	28.61	726.7	29.62	752.3	23	— 5.0	90	S	14	6.3		2k	5s	S		0.02	0.5	Cloudy	
Oswego, New York	29.80	756.9	30.12	765.0	65	18.3	89	Calm	0	0		Haze	Haze			0	0	Hazy	
Pembina, Dakota	28.70	729.0	29.49	749.0	60.5	15.8	85	W	6	2.7			10s		Calm	0.44	11.2	Cloudy	
Philadelphia, Pennsylvania	30.04	763.0	30.09	764.3	71	21.7	90	S	1	0.4		5cs	Fog	SE	Calm	0.01	0.3	Cloudy	
Phoenix, Arizona					57	13.9	81	Calm				0	0			0	0	Clear.	
Pike's Peak, Colorado	17.69	449.3	29.90	759.4	12	—11.1	61	NW	17	7.6		0	2s		Calm	0.06	1.5	Clear	
Pioche, Nevada	24.14	613.1	29.91	759.7	41	5.0	41	SW	2	0.9		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.20	744 0	30.08	764.0	63	17.2	94	NW	2	0.9			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.43	747.5	30.08	764.0	64	17.8	83	Calm	0	0		0	Sm'e			0	0	Smoky	
Portland, Maine	30.03	762.7	30.07	763.8	68	20.0	65	NE	9	4.0		Haze	Haze			0	0	Hazy	
Portland, Oregon	30.12	765.0	30.22	767.6	56	13.3	87	SW	4	1.8			10s		Calm	0.08	2.0	Cloudy	
Prescott, Arizona					49	9.4	59	SE				0	0			0	0	Clear	
Punta Rassa, Florida	29.97	761.2	29.99	761.7	78	25.6	72	NE	4	1.8		0	0			1.04	26.4	Clear	
Red Bluff, California	29.75	755.6	30.10	764.5	68	20.0	42	NW	16	7.2		0	0			0	0	Clear	
Rochester, New York	29.50	749.3	30.10	764.5	65	18.3	89	W	4	1.8		0	Fog		Calm	0	0	Clear.	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.76	755.9	30.34	770.6	54	12.2	90	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
Sacramento, California	29.99	761.7	30.08	764.0	57	13.9	63	N	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.98	761.5	72	22.2	85	S	10	4.5		0	0			0	0	Clear	
St. Marks, Florida	29.99	761.7	30.00	762.0	73	22.8	95	Calm	0	0		2c	0	Calm		1.17	29.7	Clear	
St. Paul, Minnesota	28.84	732.5	29.01	762.1	74	23.3	81	SE	10	4.5			10s		SW	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.69	652.5	30.02	762.5	50	10 0	86	Calm	0	0			10n		Calm	0.11	2.8	Light rain	
San Antonio, Texas	29.24	742.7	29.80	756.9	77	25.0	90	Calm	0	0		5c	5ks	Calm	SE	0	0	Cloudy	
San Diego, California	29.95	760.7	30.02	762.5	60	15.6	76	NE	7	3.1		0	0			0	0	Clear	
Sandusky, Ohio	29.44	747.8	30.09	764.3	68	20.0	79	S	3	1.3		0	Sm'e		Calm	0	0	Smoky	
Sandy Hook, New Jersey	30.06	763.5	30.08	764.0	72	22.2	85	Calm	0	0			Fog		Calm	0	0	Foggy	
San Francisco, California	30.02	762.5	30.08	764.0	58	14.4	75	S	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	41	5.0	83	N	6	2.7		0	Haze			0.22	5.6	Dense haze	
Savannah, Georgia	29.94	760.5	30.03	762.7	78	25.6	86	NW	4	1.8		0	0			0	0	Clear	
Shreveport, Louisiana	29.75	755.6	29 96	761 0	78	25.6	86	SE	1	0.4		0	0			0	0	Clear	
Smithville, North Carolina	30.00	762.0	30.04	763.0	74	23.3	90	NE	7	3.1		5cs	0	W		0	0	Fair	
Springfield, Massachusetts	29.90	759.4	30.03	762.7	70	21.1	84	Calm	0	0		0	0			0	0	Clear	
Stanwix, Arizona					53	11.7	73	SW				0	0			0	0	Clear	
Stockton, Texas					69	20.6	90	S	4	1.8			10s		S	1.00	25.4	Cloudy	
Thatcher's Island, Mass	30.03	762.7	30.08	764.0	65	18.3	94	N	8	3.6		0	0			0	0	Hazy	
Toledo, Ohio	29.41	747.0	30.07	763.8	64	17 8	94	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Tucson, Arizona	27.40	696.0	29.95	760.7	58	14.4	93	SE				0	0			0.67	17.0	Clear	
Tybee Island, Georgia	29.98	761.5	30.01	762.2	77	25.0	90	NE	12	5.4		5k	0	NE		0	0	Fair	
Umatilla, Oregon	29.75	755.6			58	14.4	57	W	26	11.6			10s		W	0	0	Cloudy	
Vicksburg, Mississippi	29.76	755.9	30.01	762.2	74	23.3	90	SE	5	2.2		0	0			0.01	0.3	Clear	
Virginia City, Montana	24 16	613.6	29.64	752.8	40	4.4	64	SW	10	4.5		0	5s		W	0.21	5.3	Fair	
Visalia, California	29.71	754.6	30.08	764.0	53	11.7	60	SE	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.98	761.5	30.09	764.3	70	21.1	95	NE	1	0.4		8cs;ck	Fog	Calm; N		0.42	10.7	Foggy	
Wickenburg, Arizona					49	9.4	6	NW				0	0			0	0	Clear	
Wilmington, N. Carolina	29.96	761.0	30.03	762.7	71	21.7	90	NE	4	1.8			10s		E	0.02	0.5	Cloudy	
Winnemucca, Nevada	25.80	655.3	30.16	766.1	49	9.4	57	SE	9	4.0		5c	2s	NW	SE	0	0	Fair	
Wood's Holl, Mass	30.04	763.0	30.10	764.5	71	21.7	90	NW	5	2.2		2c	0	NW		0	0	Fair	
Yankton, Dakota	28.45	722.9	29.69	754.1	61	16.1	88	NW	4	1.8			10n		Calm	0.48	12.2	Light rain	
Yuma, Arizona	29.85	758 2	30.02	762.5	60	15.6	25	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.41	747.0	29.46	748.3	39.0	3.9	100	E	18	8.0			10n			0.20	5.1	Raining	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.93	760.2	29.95	760.7	81	27.2	79	Calm	0	0		5c;cs	0	Calm		Inap.	Inap.	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	81	27.2	86	Calm	0	0		5c	0	Calm		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.84	757.9	29.92	760.0	84	28.9		SE			1					0	0	Clear	F. M Everett.
St. Thomas, W. I.					81	27.2	86	E				2s	5ks	E		0	0	Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.78	756.4	29.80	756.9	84	28.9	83	SE				0	10ks		S			Rainy	L. V. Bigard.
Bridgetown, Barbados, W. I	29.98	761.5	29.99	761.7	83	28 3	83	E	4	1.8		5k	10ks	NE		0	0	Cloudy	E. Racker.
Paramaribo, D. Guiana, S. A.			30.01	762.2	83	28.3	79	E			3	5k	5ks	E		0.730	18.54	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	26.21	640.3			70.0	21.1	74	Calm			0	5c;cs	0			0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	30.08	764.0	30.10	764.5	74	23.3		NE			4					0.01	0.3		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,600 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m., Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.09	764.3	63	17.2	56	13.3	100	Calm	0	0			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.17	766.3			81	27.2	78	N	7	3.1			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.15	765.8	70	21.1	70	21.1	80	NE			1		0			0	0			Smoky	
Naval Hospital, Yokohama, Japan	29.66	753.4	74.5	23.6	73.5	23.1	98	SW			6		10n		SW	2.33	59.2			Heavy rain	
Adams, S. 33° 24′, W. 51° 04′	30.12	765.0	63	17.2	59	15.0	88	SSE			1–3		1		SE	Light	Light	Light	E	D. clouds	
Alert, N. 35° 31′, E. 140° 45′	29.92†	760.0†	70	21.1	70	21.1	100	E			3–5		10		E			Smooth		Raining	
Alliance, Constantinople, Turkey.	30.27	768.8	69	20.6	70	21.1	57	NNE			2–3		4		Calm					Pleasant	
Ashuelot, Che-foo, China	29.96	761.0	74	23.3	72	22.2	100	WNW			3		6		N&W					Showery	
Canonicus, New Orleans, La.	30.01	762.2	56	13.3	79	26.1	91	ENE			1		1							Clear	
Colorado, New York, N. Y.	30.05†	763.3†	72	22.2	71	21.7	90	N	1	0.4			7		E	0	0			Dense fog	
Despatch, Beikos Bay, Bosphorus	30.28	769.1	72	22.2	70	21.1	85	NNE			2		2		Calm			Smooth		Pleasant	
Essex, Off Madeira Island	30.15	765.8	74	23.3	77	25.0	86	E			3		7		E			Smooth	E	D. clouds	
Franklin, Norfolk, Va.	30.10	764.5	70	21.1	75	23.9	?	N	2.4	1.1			4		N	1.3	33.			Overcast	
Frolic, S. 13° 02′, W. 38° 29′	30.29	769.4	79	26.1	77	25.0	95	SE			3		5kn		Calm	Blank	Blank	Moderate.	S&E	D. clouds	
Gettysburg, Naples, Italy	30.02‡	762.5‡			81	27.2	100	W			2		2		Calm	0	0			D. clouds	
Kearsarge, Hong-Kong, China	30.06	763.5			83	28.3	96	SSW			7		8		S&W	0	0	Smooth		D. clouds	
Lackawana, Neeah Bay, W. T.	30.08	764.0			57	13.9	81	SSW			1		10		SE			Ground	N&W	D. clouds	
Marion, Smyrna, Turkey	30.06	763.5	75	23.9	80	26.7	41	WSW			2		1		Calm	0	0	Smooth		D. clouds	
Michigan, Buffalo, N. Y.	29.63	752.6	70	21.1	66	18.9	74	SSE			1		0							Clear	
Monocacy, Yokohama, Japan	29.68	753.9	75	23.9	73	22.8	100	W			2		10		W					Thunder-storm	
New Hampshire, Port Royal, S. C.	30.20	767.1			76	24.4	82	NNE	10	4.5						0	0			Blue sky	
Omaha, S. 27° 08′, W. 71° 04′	30.12	765.0	61.5	16.4	59	15.0	82	SSE	1	0.4			10		S	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.08†	764.0†	68	20.0	65	18.3	89	Calm			0		9					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.14	765.5	71	21.7	71	21.7	90	NNW			1		8		Calm					Foggy	
Palos, Wanchow, China	30.06	763.5	75	23.9	74	23.3	86	W			1		10		Calm	Blank	Blank			Misty	
Plymouth, New York, N. Y.	30.38	771.6	74	23.3	70	21.1	90	NNE			1		9		E					Hazy	
Ranger, Nagasaki, Japan	30.08	764.0			74	23.3	81	Calm			0		10		Calm					Cloudy	
Rio Bravo, Brownsville, Texas	29.78	756.4			78	25.6	95	NE			1		4		NE					Hazy	
Santee, Annapolis, Md.	30.17	766.3	73	22.8	72	22.2	90	NE			3		5		E	0.02	0.5			Cloudy	
St. Louis, League Island, Pa	30.05	763.3	72	22.2	70	21.1	95	N	1	0.4			7		E	0.01	0.3			Foggy	
Tennessee, Yokohama, Japan	29.67	753.6	76	24.4	75	23.9	95	W	8	3.6			10			2.05	52.1	Light	S&E	Thunder-storm	
Trenton, Marseilles, France	30.24	768.1	76	24.4	74	23.3	90	W	3	1.3			1		N&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	30.11	764.8	79	26.1	79	26.1	40	NNW			3		1		NW					D. clouds	
Wabash, Boston, Mass.	30.11	764.8	71	21.7	70	21.1	80	W	5	2.2			4		W	0	0			Hazy	
Wyoming, Washington, D. C.	30.26†	768.6†	73	22.8	73	22.8		Calm			0		6							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking																			Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			
Hong Kong, China.					84	28.9		SW			1							Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
N. 31° 59′, E. 134° 59′			29.55†	758.2†	79	26.1		NW			4		8		NE	Short	NW	Squally	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			
N. 50° 50′, E. 0° 54′			30.06	763.5	66.0	18.9	81	WSW			6		10			Rough	WSW	Haze; smoke	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 50° 54′, W. 32° 31′			29 42*	747.3*	63	17.2		SW			4		3		SW	Moderate	SW	Very fine	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.97	761.2	77	25.0	82	E	3	1.3		2k	0					Clear	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 15, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.09	764.3	79.5	26.4	73	SE			2		3			0.209	5.3	Fair	Michel.
Algiers			30.03	762.7	81.7	27.6	83	NE			2		3			0	0	Fair	Peter.
La Calle			30.07	763.6	80.2	26.8	79	NE			3		3			0	0	Fair	Fleury.
Tunis			30.09	764.2	87.8	31.0		SE			4		2			0	0	Clear	Jacques.
Sfax			30.15	765.7	84.2	29.0		SE			3		2			0	0	Clear	Husson.
Saida			30.04	762.9	82.2	27.9		SSW			3		2			0.067	1.7	Clear	Millot.
Tebessa			30.11	764.9	78.1	25.6		E			1		2			0	0	Clear.	Bourgeois.
Geriville			30.05	763.3	73.8	23.2	62	S			1		9			0	0	Hidden	Lemaillot.
Laghount			30.05	763.2	79.7	26.5	59	W			2		2			0	0	Clear	François.
Biskra			30.17	766.2	89.8	32.1	47	SE			1		7			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 800? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.47	748.6	30.00	761.9	79.0	26.6	46	SW			3		2			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.17	740.8	29.91	759.6	72.1	22.3	56	W			4		5			0.008	0.2		Dr. Wierzbiski.
Eperies	29.07	738.4	29.92	759.9	71.4	21.9	55	S			1		3c			0	0		Julius Mikolik.
Gratz	28.77	730.7	29.98	761.4	70.5	21.4	74	S			3		0			0	0		Andreas Rospini.
Hermannstadt	28.60	726.3	29.96	760.9	73.2	22.9	43	WNW			3		3			0	0		Prof. Reissenberger.
Kremsmünster	28.62	727.0	29.91	759.8	69.4	20.8	68	W			4		0			0	0		Prof. C. Wagner.
Lemberg	28.91	734.2	29.87	758.7	62.8	17.1	78	NW			2		10			0	0		Dr. T. Stanecki.
Pola	29.96	761.0	30.07	763.7	77.5	25.3	57	WNW			2		1cs			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.70	754.3	29.97	761.2	70.9	21.6	67	Calm			0		4			0	0		Karl Stancel.
Trieste	29.98	761.6	30.09	764.2	75.2	24.0	64	Calm			0		0			0	0	Clear.	P. Busin.
Vienna	29.26	743.3	29.93	760.1	78.4	25.8	51	N			1		2			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.49	723.7	29.96	760.9	67.3	19.6	56	SSW			6		7			0.063	1.6		Royal Observatory.
Brussels	29.69	754.0	29.84	758.0	63.3	17.4	79	WSW			5		10		WSW	0.047	1.20	Light rain	
Furnes																			
Maeseyck	29.77	756.3	29.91	759.6	67.5	19.7	81	SSW			6		10			0.087	2.2		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.83	757.7	29.93	760.2	58.1	14.5		NW	22	9.8			3			0.030	0.76	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	30.00	762.0	30.01	762.2	60	15.6		NW			4		4					D. clouds	William McNeil.
Armagh, Observatory			30.14	765.5	58.6	14.8		NNW	6	2.7			7					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.01	762.2	58.1	14.5		WNW	26	11.6			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.17	766.3	62.3	16.8		NW			1		4					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.56	750.8	29.95	760.7	59.2	15.1		NW			2		9			1.14	29.0	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)																			Pvt. G. W. Roberts, A. [H. C
Cambridge, Observatory			29.94	760.5	58.0	14.4		N			2		10					Raining	H. Todd.
Cardington			29.95	760.7	61.0	16.1		NW			3		8					Overcast	John McLaren.
Chatham, School M. E.	29.80	756.9	29.92	760.0	63.2	17.3		NW			2		10					Drizzling	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.67	728.2	30.13	765.3	57.0	13.9		W			4		5					Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.04	763.0																	J. Mac Gowan.
Dover	29.87	758.7	29.89	759.2	64	17.8		WSW			4		10					Overcast	J. Costello.
Eccles, (near Manchester)			29.95	760.7	62.8	17.1		NW	4.8	2.1			8					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.90	759.4	30.13	765.3	59.7	15.4		NW			4		4					D. clouds	The Staff.
Fort Napier, (Natal)	27.57	700.3	29.78	756.4	77.2	25.1		E			2		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.93	760 2	75.0	23.9		W			1		6					Raining	
Galway, Queen's College			30.14	765.5	67	19 4		W			1		1					D. clouds	R. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.99	761.7	30.02	762.5	75.0	23.9		E			6		4					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.79	756.7	30.00	762.0	59.8	15.4		W			2		5					D. clouds	D. G. Maclean.
Great Yarmouth	29.80	756.9	29.80	756.9	57	13.9		N			5		7					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.77	756.1	29.94	760.5	57.3	14.1		NNW			3		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.87	758.7	30.09	764.3	61.5	16.4		WNW			4		7					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.12	765.0	62	16.7		N			4		4ck			0.22	5.6	Fine	M. P. Moyle.
Holyhead	30.05	763.3	30.10	764.5	58	14.1		NNW			5		1					Blue sky	John Tilston.
Jersey	29.82	757.4	30.11	764.8	60.8	16.0		WNW			6		9			Blank	Blank	Squally	J. Fisher.
Kew, Observatory			29.96	761.0	58.9	14.9		NW	16	7.2			9s;d					Threatening	The Staff.
Kingstown	30.08	764.0	30.11	764.8	60	15.6		NW			4		8			Blank	Blank	Overcast	George Mitchell.
Leicester, Museum			29.97	761.2	61.1	16.2		N			3		9					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.04	763.0	30.12	765.0	80	26.7		NE			1		6					D. clouds	Corp'l. P. Bravis, A. H. C.
Nairn	29.84	757.9	29.93	760.2	57	13.9		WSW			3		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.98	761.5	84.5	29.2		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.82	757.4	30.00	762.0	63.2	17.3		WNW			3		7ck		NW	0.430	10.92	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.47	748.5	29.99	761.7	60.1	15.6		NNW			3		5					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.97	761.2	62	16.7		NW			3		7					D. clouds	F. Lucas
Plymouth	30.02	762.5	30.09	764.3	63.2	17.3		NW			3		7					D. clouds	John Merrifield.
Roche's Point	30.12	765.0	30.16	766.1															W. Kennedy.
Saint Ann's Head	29.94	760.5	30.10	764.5	59	15.0		NNW			4		2						John C. Walker.
Sandwick Manse, (Orkneys)			29.91	759.7	54	12.2		NW	27	12.1			4					D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)								SW			1								Sergt. W. H. Lyne.
Sheffield	29.73	755.1	29.96	761.0	60.2	15.7		NNW			2		5			0.028	0.71	Overcast	W. F. Cooper.
Silloth Rectory	29.96	761.0	29.99	761.7	65.5	18.6	66	SW			2		6			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					59.7	15.4		W			1		6					D. clouds	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			30.00	762.0	58	14.4		NW			3		5					D. clouds	John Smith.
Stratfield Turgiss	29.71	754.6	29.92	760.0	61.0	16.1		NW			1		7					D. clouds	Rev. C. H. Griffith, F. M. S
Thurso			29.89	759.2	56	13.3		NW			5		8					Overcast	John Trotter.
Truro, Royal Institution			30.15	765.8	63	17.2		N			6		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.21	767.3	59.7	15.4		WNW	9	4.0			5					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		N			4		3			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.25	768.3	30.29	769.4	62.4	16.9	56	SE	19	8.5		8	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.21	767.3	47.0	8.3	81	NW			2		4k			0.01	0.3		Francis Abbott, F. R. A. S.
Leith, Restalrig Park			30.00	762.0	59.2	15.1		NW			2		9k			0	0	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.98	761.5	30.17	766.3	74.0	23.3	63	E	12.7	5.7		0	2		E	0.03	0.8	Fine	C. Meldrum.
Melbourne, Observatory	30.39	771.9	30.48	774.2	50.4	10.2	84	SSW	12	5.4			10					Sprinkling	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.10	764.5	58	14.4		NW			4	0	0			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.67	753.6	50	10.0		NW			6		10						Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Direction from—	Weather	Observer
S. S. Algeria, N. 51° 27′, W. 10° 36′	*7.5	SW; WNW	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 48° 15′, W. 32° 15′	4	SSW	Lightning	Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine, N. 40° 10′, W. 68° 50′	0		Hazy	Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. O. Prehn.
S. S. Seine				Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller				Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
San José	26.22	666.0			68.4	20.2	92	NE			2		6cs		E	0.1	3.	Storm	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.65	753.2	29.70	754.4	59.4	15.2	76	W			2		10						
Fanöe	29.69	754.0	29.71	754.5	56.8	13.8	81	NW			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.83	757.7	29.87	758.8	46.9	8.3	92	E			4		8						
Thorshavn, (Faröe)	29.87	758.6	29.90	759.5	55.0	12.8	66	NW			2		2						
Vestervig	29.48	748.7	29.65	753.0	55.8	13.2	87	W			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.57	751.0	30.12	765.0	67.1	19.5	70	W			3		2		W	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.03	762.3	30.11	764.8	81.5	27.5	37	N			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.50	749.2	30.04	763.1	73.8	23.2	47	SW			2	5c		SW		0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.73	755.2	30.01	762.2	68.4	20.2	69	WSW			3		8		W	0	0	Very cloudy	Normal School.
Besançon	29.25	742.9	30.13	765.2	72.1	22.3	62	S			2		2		SW	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.21	741.9	30.14	765.5	79.2	26.2	95	S			1		0			0	0	Clear	Normal School.
Bourges, Normal School	29.58	751.2	30.11	764.8	70.7	21.5	66	SW			3		2		SW	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.89	759.1	30.10	764.6	61.0	16.1	76	N			3		8		N	0.108	2.75		The Staff.
Carcassonne, Normal School	29.71	754.5	30.11	764.8	86.7	30.4	54	W			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoullié, Director.
Châlons-sur-Marne, N. Sch'l	29.72	754.8	30.02	762.6	74.1	23.4	48	W			3		2k		W	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.78	731.0	30.07	763.7	80.2	26.8	34	S			2		2			0	0	Slightly cl'dy	Allnard, Director.
Commercy, Normal School	29.19	741.3	30.03	762.8	69.8	21	59	W			4		2		W	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.07	738.3	30.21	767.3	83.7	28.7	30	NW			2		0			0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.94	760.4	30.15	765.8	61.9	16.6	90	S			2		2		S	0.008	0.2	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.82	757.3	30.12	765.0	67.5	19.7	76	WSW			4		8		W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.19	741.5	30.08	763.9	72.0	22.2	64	SW			4		2		E	0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	30.06	763.5	30.16	766.0	65.5	18.6	88	WSW			3		5		W	0.039	1.0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.57	751.1	30.24	768.1	71.1	21.7	52	SE			4		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.02	737.1	30.04	763.1	64.4	18	58	SW			4		5		SW	0	0	Cloudy	Normal School.
Nismes, Normal School	29.74	755.5	29.93	760.3	93.6	34.2	33	N			6		2		N	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.80	757.0	30.04	762.9	67.8	19.9	61	W			2		10k		W	0	0	Covered	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.14	765.5	30.17	766.3	73.0	22.8	66	W			1		5		NW	6	0	½ covered	Lt. Decante, Director.
Rouen, Normal School	29.93	760.3	30.02	762.5	68.7	20.4	61	WNW			8		5		W	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.13	740.0	30.15	765.9	86.0	30	54	W			1		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.84	757.8	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.12	765.1	78.4	25.8	55	WSW			1		0			0	0	Clear	The Staff.
Mont-Louis	25.13	638.2	30.44	773.2	66.2	19.0	44	SE	14.9	6.66			4		NW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.76	755.9	30.04	762.9	66.2	19.0	77	WSW			3–4		10		WSW	Inap.	Inap		Marié Davy, Director.
Perpignan			30.13	765.4	77.5	25.3	61	E	7.4	3.33			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.51	546.4			54.5	12.5		SE			2		10					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.78	578.6			58.1	14.5		SE			2		10			0.138	3.5	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.87	758.8	30.04	763.0	68.5	20.3	70	WSW			2		10		W	0	0		E. Renou.
Toulouse, Observatory	29.46	748.3	30.19	766.8	81.3	27.4	38	N			1		1			0	0		The Staff.
Tours	29.97	761.2	30.17	766.2	70.5	21.4	60	W			2		5		NW	0	0		C. Marquet.
Versailles, (near Paris)			30.05	763.2	66.2	19.0	77	W			4		10			0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.95	760.6	29.97	761.3	70.2	21.2	97	Calm	0	0			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,680.40 m., or 5,214.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,236 m., or 7,335.7 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.68	753.9	29.85	758.2	69.4	20.8	59	S			2		7			0	0		Prof. Arndt.
Breslau	29.37	746.1	29.90	759.5	72.3	22.4	47	W			5		1			0	0		Royal University Obs'y.
Carlsruhe	29.55	750.6	29.96	761.0	73.8	23.2	54	SW			4		3			0	0		Albert Senz.
Cassel	29.33	744.9	29.93	760.3	74.1	22.4	49	SW			5		7	W		0	0		Dr. H. Möhl.
Crefeld	29.70	754.4	29.86	758.5	69.4	20.8	67	SW			6		8			0	0		Director Lose.
Emden	29.67	753.6	29.71	754.5	62.8	17.1	87	WSW			4		10			0.063	1.6		Prof. Prestel.
Frankfort on the Main	29.63	752.5	29.97	761.3	73.9	23.3	37	SSW			4		7			0	0		Physical Society.
Friedrichshafen	28.66	728.0	30.06	763.5	67.6	19.8	71	S			2		0			0	0		M. Wilhelm.
Hamburg	29.71	754.7	29.78	756.5	65.1	18.4	79	WSW			5		8ks			0.039	1.0	Showery	Captain F. Hegemann.
Kiel	29.70	754.4	29.72	754.8	58.5	14.7	86	SW			2		10			0.140	3.55		Prof. G. Karsten.
Königsberg, (Prussia)	29.63	752.6	29.70	754.4	60.4	15.8	76	NW			2								Prof. E. Luther.
Köslin			29.80	756.9	59.9	15.5		SW			4		4			0.248	6.3		H. Müller.
Leipsic, Observatory	29.50	749.3	29.91	759.6	72.7	22.6	50	SW			3		8	W		0	0		Prof. Bruhns.
Memel, Naval School	29.60	751.9	29.65	753.1	57.9	14.4	88	W			7		10n						Reinbrecht von Skalweit.
Neufahrwasser	29.75	755.6	29.76	756.0	63.0	17.2	63	WNW			5		7			0.047	1.2		A. Lothes.
Posen	29.72	754.9	30.00	762.0	66.2	19.0	74	SW			3–4		9			0	0		Dr. Magener.
Strassburg Obs., (in Alsace)	29.47	748.6	30.00	762.0	76.8	24.9	49	SW			4		2	W		0	0		Dr. Schur.
Stuttgart	29.05	737.9	29.96	761.0	75.2	24.0	36	W			1		1	W		0.051	1.3	Raining	Prof. Schoder.
Treves, (Trier)																			Prof. Flesch.
Weissenburg, (Bavaria)	28.50	723.9	29.95	760.7	72.0	22.2	37	W			2		1	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.79	756.7	29.83	757.7	57.0	13.9	94	SW			3		10			Blank	Blank		E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.67	753.7	30.05	763.3	81.7	27.6		NW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.73	755.2	29.78	756.4	82.9	28.3	75	SW	33.0?	14.8?			3			0	0	D. clouds	
Deesa																			
Bombay	29.85	758.1	29.89	759.1	83.5	28.6	73	WSW	11.0	4.9			3	W	NW	0	0	Misty	
Poona	27.78	705.7	29.78	756.4	79.4	26.3	64	W					7	W	NW	0	0	D. clouds	
Lahore	28.93	734.9	29.65	753.1	95.2	35.1	41	Calm	2.0	0.9			0			0	0	Blue sky	
Belgaum	27.38	695.4	29.92	760.0	75.8	24.3	85	W	6.0	2.7			7	E	W			Raining	
Bangalore																			
Roorkee	28.80	731.5	29.67	753.6	94.8	34.9	20	NW	4.0	1.8			2			0	0	Strong wind	
Agra	29.13	740.0	29.68	753.8	98.7	37.1	23	W								0	0		
Trichinopoly																			
Nagpur	28.77	730.8	29.81	757.1	84.6	29.2	65	Calm	3.2	1.4			2			0	0	D. clouds	
Madras																			
Lucknow	29.31	744.5	29.67	753.6	95.1	35.1	30	NNW	6.2	2.8						0	0	Blue sky	
Allahabad	29.37	746.0	29.68	753.7	89.7	32.1	51	Calm	4.0	1.8			0			0	0	Blue sky	
Patna	29.51	749.6	29.69	754.1	89.5	31.9	58	W	0.9	0.4			0			0	0	Foggy	
Hazaribagh	27.76	705.0	29.74	755.5	82.6	28.1	70	WNW	5.5	2.5			0			0	0	Misty	
Cuttack	29.70	754.3	29.78	756.3	84.6	29.2	72	Calm	3.2	1.4			8			0	0	D. clouds	
Calcutta (Alipore)	29.74	755.4	29.76	756.0	85.1	29.5	83	SE	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.33	745.0	29.72	754.8	82.2	27.9	85	Calm	1.0	0.4			0			2.57	65.3	Blue sky	
Chittagong	29.72	754.8	29.81	757.1	82.4	28.0	85	SW	4.9	2.2			5			0	0	Blue sky	
Sibsagar	29.44	747.7	29.77	756.2	80.7	27.1	87	NNW	2.5	1.1			10	W	W	0.48	12.2	D. clouds	
Rangoon																			
Jubbulpore	28.44	722.5	29.80	756.9	83.5	28.6	72	W	4.9	2.2			2	W		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.43	569.7	30.11	764.9	54.5	12.5	83	NNW			1		3	NW		0	0		Ab. Dom. Mongini.
Stelvio	22.39	568.8	30.12	765.1	53.1	11.7		WSW			2		0			0	0		Signora Ernesta Manfredi.
Udine	29.65	753.1	30.05	763.3	77.0	25.0	57	Calm	0	0			3			0	0		Prof. Giovanni Clodig.
Padua	29.92	760.0	30.03	762.7	79.2	26.2	52	WSW	1.3	0.6			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.82	757.3	30.00	762.0	81.5	27.5	46	SW	7.4	3.3			0			0	0		Conte Alm. Da Schio.
Verona	29.73	755.2	29.953	760.67	89.6	32.0	41	W			1		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.77	730.7	30.04	763.1	79.5	26.4	55	SW			1		1			0	0		Prof. Trionfini Carlo.
Domodossola	29.02	737.0	30.00	762.1	77.0	25.0	66	S			4		2			0	0		Prof. Giuseppe Calza.
Milan	29.52	749.9	30.02	762.5	82.4	28.0	52	W			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.70	754.3	30.03	762.8	78.8	26.0	60	N			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.17	740.8	30.04	762.9	79.9	26.6	48	SSE	2.5	1.1			2	W		0	0		Prof. P. F. Denza.
Mondovi	28.18	715.8	30.02	762.4	77.0	25.0	48	NNW			4		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.90	759.4	30.11	764.9	75.9	24.4	72	SSW			2		6	SW		0	0		Prof. L. Vassallo.
Genoa	29.94	760.4	30.10	764.6	76.8	24.9	64	SW	4.9	2.2			2	S		0	0		Prof. G. M. Garibaldi.
Piacenza	29.79	756.7	30.04	762.9	80.1	26.7	51						0			0	0		Dott. G. Manzi.
Parma	29.70	754.4	30.00	762.1	82.6	28.1	56	NNW			4		1	NW		0	0		Prof. P. Pigorini.
Florence	29.85	758.2	30.10	764.4	82.4	28.0	37	W			4		0			0	0		Cav. F. Meucci.
Leghorn	30.01	762.2	30.09	764.3	77.2	25.1	60	WSW	1.3	0.6			0			0	0		Prof. P. Monte.
Siena	28.91	734.2	30.07	763.6	84.7	29.3	30	SW	0	0			4	W		0	0		Prof. L. Toscani.
Urbino	28.56	725.3	30.08	763.9	79.3	26.3	37	SW			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.07	763.8	30.127	765.07	76.5	24.7	72	NE	23.0	10.3			0			0	0		Prof. Luigi Guidi.
Ancona	29.94	760.4	30.04	763.0	77.4	25.2	49	SE			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.03	762.8	30.14	765.5	81.3	27.4	40	WSW			4		2	S		0	0		Avv. P. Ponticelli.
Rome	29.95	760.6	30.11	764.9	82.8	28.2	52	W	8.1	3.6			0			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U	29.94	760.4	30.13	765.3	83.1	28.4	61	WSW			2		3	N		0	0		Prof. L. Palmieri.
Lecce	29.88	758.9	30.12	765.1	78.4	25.8	55	NNE	9.4	4.2			0			0	0		Prof. C. DeGiorgi.
Cosenza	29.26	743.3	30.11	764.9	82.9	28.3	43	NW	5.6	2.5			3	NW		0	0		Prof. F. D. Conti.
Cagliari	29.87	758.7	30.16	763.5	81.5	27.5	60	SE			2		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.05	763.3	30.10	764.5	81.3	27.4	66	SE			2		4			0	0		Prof. F. Cafiero.
Palermo	29.84	758.0	30.09	764.2	78.8	26.0	67	NE	8.7	3.9			4			0	0		Prof. G. Cacciatore.
Caltanissetta	28.19	716.1	30.05	763.3	78.3	25.8	39	W			4		5	SE		0	0		Prof. A. Pagani.
Syracuse	29.98	761.6	30.06	763.5	81.3	27.4	63	SW			4		6	WSW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.61	752.1	30.17	766.2	82.9	28.3	55	WNW	1.3	0.6			3	NW		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokio, Japan.

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.64	752.8	29.72	754.8	73	22.8	96	Calm	0	0			2			0.11	2.8	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico.

Mexico, Central Obs'y	23.06	585.7	30.04	763.0	53.2	11.8	85	NW	3.4	1.50		2c	0			0	0	Clear	Mariano Bárcena. Vicente Reyes. Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.56	750.8	29.56	750.8	64.4	18.0		SW			5					0	0		
Groningen	29.69	754.0	29.74	755.4	61.5	16.4		WSW			4					0.189	4.8		
Helder	29.72	755.0	29.72	755.0	62.6	17.0		SSW			4					0.130	3.3		
Utrecht	29.76	756.0	29.81	757.2	61.5	16.4	97	SSW			4		10			0.051	1.3	Dull	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Bergen	29.47	748.4	29.52	749.8	57.2	14.0	96	S	22.8	10.2			8			0.709	18.0	Raining	
Brönö	29.65	753.0	29.69	754.0	59.0	15.0	70	NNE	9	4			2			0	0		
Christiania	29.47	748.5	29.61	752.2	53.8	12.1	85	WSW	5 to 7	2 to 3			10			0.917	23.3		
Tromsö	29.72	754.8	29.76	755.9	47.5	8.6	58	Calm	0	0			0			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.91	759.6	30.10	764.4	69.8	21.0	75	W	10.5	4.7	.....	.....	4	.....	.....	0.059	1.5	.....	Dr. J. A. Sampaio
Campo Major	29.13	740.0	30.10	764.6	86.5	30.3	33	E	11.2	5.0	.....	.....	3	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.05	763.3	30.14	765.5	76.3	24.6	56	SW	8.7	3.9	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	755.0	30.07	763.7	83.7	28.7	42	NE	16.1	7.2	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.03	762.8	30.10	764.6	75.9	24.4	67	WNW	4.9	2.2	.....	.....	6	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India Off Ponto Delgada	.....	.....	.....	30.10	764.4	77.0	25.0	61	WNW	.....	.....	2	.....	2	.....	WNW	3	.....	D. clouds.	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.43	747.5	29.85	758.1	59.0	15.0	84	WSW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.23	742.5	29.64	752.9	59.5	15.3	84	WSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.37	746.0	29.61	752.1	55.8	13.2	75	E	7	3	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
St. Petersburg	29.69	754.0	29.70	754.4	47.8	8.8	57	ENE	11	5	.....	.....	5	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.45	747.9	29.77	756.1	46.4	8.0	72	NE	7	3	.....	.....	2	.....	.....	.....	.....	.....	Ch. Forsten.
Zieff	29.13	739.8	29.75	755.6	61.0	16.1	79	W	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.83	757.7	29.90	759.5	68.0	20.0	61	W	9	4	.....	.....	10	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.87	758.8	29.89	759.3	73.4	23.0	76	S	7	3	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.13	740.0	29.67	753.6	57.9	14.4	81	S	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.55	750.5	29.75	755.6	59.7	15.4	62	WSW	4	2	.....	.....	9	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.67	753.7	29.69	754.2	42.6	5.9	75	NW	22	10	.....	.....	8	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.63	727.3	30.01	762.2	71.4	21.9	42	Calm	0	0	.....	.....	4	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.06	763.5	29.98	761.4	67.5	19.7	43	SSW	11	5	.....	.....	9	.....	.....	Blank	Blank	.....	Sebastianof.
Kasan	29.43	747.4	29.69	754.2	55.0	12.8	65	SSW	7	3	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	29.29	744.0	29.66	753.4	45.3	7.4	91	E	13	6	.....	.....	5	.....	.....	.....	.....	.....	Tschernischei.
Ekaterinburg	28.87	733.4	29.82	757.3	51.8	11.0	69	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.78	756.5	30.01	762.3	68.2	20.1	49	N	4	2	.....	.....	1	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.33	719.6	29.97	761.2	75.6	24.2	50	Calm	0	0	.....	.....	3	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.35	745.6	29.87	758.7	54.5	12.5	88	NW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.50	749.4	29.65	753.1	54.3	12.4	89	NW	2	1	.....	.....	6	.....	.....	Blank	Blank	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	29.85	758.1	29.99	761.7	65.3	18.5	60	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	58.1	14.5	86	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.95	709.9	.....	.....	81.0	27.2	42	NE	3.7	1.67	.....	0	2	.....	.....	0	0	Partly cloudy	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.87	758.8	29.95	760.8	78.1	25.6	82	E	4.9	2.2	.....	0	0	.....	.....	0.697	17.7	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.94	760.5	30.04	762.9	84.9	29.4	52	ESE	28.2	12.6	.....	0	2	.....	E	0	0	.....	Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W.I.	.....	.....	29.86	758.5	84.2	29.0	83	S	.....	.....	.....	4s	1k	.....	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Haparanda	29.87	758.8	29.91	759.8	45.0	7.2	55	NE	.....	.....	2	.....	2	.....	.....	0	0	.....	
Umea	29.79	756.6	29.84	757.9	46.8	8.2	48	E	.....	.....	4	.....	5	.....	.....	0	0	.....	
Hernosand	29.74	755.5	29.80	756.8	48.9	9.4	74	ENE	.....	.....	6	.....	7	.....	.....	0	0	.....	
Stockholm	29.43	747.6	29.61	752.1	54.3	12.4	87	NNE	.....	.....	6	.....	10	.....	.....	0.299	7.6	.....	
Wisby	29.47	748.6	29.53	750.1	55.0	12.8	85	NW	.....	.....	4	.....	10	.....	.....	0.461	11.7	.....	
Sub-Series.																			
Upsala	29.56	750.9	29.64	752.8	54.0	12.2	81	NE	6.7	3.0	.....	.....	10	.....	.....	0.093	2.35	.....	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.73	729.8	30.10	764.4	76.8	24.0	46	SW			1		0			0	0	Clear	The Observatory.
Zurich	28.48	723.5	30.06	763.5	72.7	22.6	69	W			1		1			0	0	Clear	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +2.7 mm; Thermometer, +6.7 cent.; Relative Humidity, —16 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			30.08	763.9	72.7	22.6	62	ESE	3	1.5			2		NNW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.15	765.8	71.4	21.9		SE			1		0						B. Stéfanidès.
Valona			30.20	767.1	77.0	25.0		W			1		0			0	0	Clear	A. Bertrand.
Varna			30.00	762.0	64.4	18.0		NW			1		0						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.92	759.9	82.6	28.1	60	NW			2		0			0	0		Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B	30.01	762.2	30.08	764.0	54.9	12.7	81	Calm	0	0			10			Inap.	Inap.		Hon. J. Ferguson.
Brockville, Ontario			30.00	762.0	65	18.3		Calm	0	0		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B			30.10	764.5	56	13.3	77	Calm	0	0			10s		NW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			30.09	764.3	57	13.9	67	Calm	0	0			10s		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	29.99	761.7	62.0	16.7	97	NE			1	0	Fog			0	0	Foggy	James Smith, M. A.
Dalhousie, N. B	29.89	759.2	29.92	760.0	52	11.1	79	W			1					0	0	Threatening	H. A. Johnson
Esquimault, B. C	30.05	763.3	30.10	764.5	52.3	11.3	86	Calm				0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.02	762.5	53	11.7	81	SW	6	2.7		5ck	5s	SW	SW	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.06	763.5	30.13	765.3	51.3	10.7	78	W	2	0.9		0	0			0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba			29.52	749.8	42	5.6	98	W	5	2.2		2k	2ks	W	W	0.110	2.79	Fair	James Stewart.
Goderich, Ontario	29.12	739.6	29.88	758.9	67.9	19.9	87	S			2	3k	0			0	0	Fair	H. J. Strang, M. A
Granton, Ontario	28.84	732.5	29.89	759.2	67	19.4	89	SE			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S	29.95	760.7	30.08	764.0	56	13.3	87	N	6	2.7			2ks		N	0	0	Cloudy	F. Allison, M. A
Hamilton, Ontario	29.60	751.8	29.96	761.0	65.9	18.8	76	W			1	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.79	756.7	29.81	757.2	46	7.8	77	N			5	5k	2ks		N	0.05	1.3	Cloudy	E. Weedon.
*Kingston, Ontario	29.68	753.9	30.04	763.0	69	20.6	88	SE	3	1.3		0	Sm'e		SE	0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.82	757.4	30.01	762.2	68	20.0	84	W	2	0.9		0	Sm'e			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.22	742.2	29.89	759.2	66	18.9	89	S	6	2.7		0	0			0	0	Clear	Rev. R. Mosley
Peterboro, Ontario	29.23	742.4	29.96	761.0	67.7	19.8	84	Calm			0	0	0			0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario	29.27	743.4	29.93	760.2	69	20.6	90	S	4	1.8		2ck	0	S		0	0	Fair	H. Morgan.
Port Hastings, N. S	30.01	762.2	30.06	763.5	57.5	14.2		NW	1	0.4						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.30	744.2	29.91	759.7	68	20.0	96	SE	2	0.9		2k	0	S		0	0	Clear	M. Payne.
*Quebec, Quebec	29.72	754.9	30.03	762.7	64	17.8	79	Calm	0	0		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.49	749.0	29.94	760.5	57	13.9	97	Calm	0	0		0	0			0	0	Low fog	W. H. McIntyre.
St. John, N. B	29.95	760.7	30.12	765.0	53	11.7	83	Calm	0	0		0	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.17	740.9	29.84	757.9	69	20.6	83	S	5	2.2		0	Haze			0	0	Hazy	K. Stewart.
Stayner, Ontario			29.86	758.4	67	19.4	84	SE	5	2.2		0	0			0	0	Clear	R. J. Cole.
Stratford, Ontario	28.66	728.0	29.89	759.2	65.0	18.3	98	SE	5	2.2		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	30.01	762.2	30.04	763.0	57	13.9	54	NW	7	3.1		2k	0	NW		0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.57	751.1	29.94	760.5	68	20.0	93	SE	4	1.8		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					47.0	8.3	77	NW				10k	10s			0.10	2.5	Fair	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.84	757.9	30.06	763.5	64	17.8	79	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Fair	
Alpena, Michigan	29.13	739.9	29.75	755.6	67	19.4	79	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.02	762.5	30.08	764.0	72	22.2	100	E	6	2.7	.....	.....	8s	.....	E	0	0	Cloudy	
Augusta, Georgia	29.83	757.7	30.01	762.2	73	22.8	85	SE	1	0.4	.....	2c	Haze	Calm	Calm	Inap.	Inap.	Clear	
Baltimore, Maryland	29.97	761.2	30.02	762.5	71	21.7	95	SE	5	2.2	.....	.....	10s	.....	E	0.46	11.7	Cloudy	
Barnegat, New Jersey	30.02	762.5	30.04	763.0	75	23.9	85	SE	10	4.5	.....	0	8s	.....	SE	0.04	1.0	Fair	
Bismarck, Dakota	27.84	707.1	29.47	748.5	46	7.8	69	Calm	0	0	.....	Haze	2s	.....	W	0.03	0.8	Clear	
Boise City, Idaho	27.18	690.4	29.72	754.9	59	15.0	64	NW	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Boston, Massachusetts	29.94	760.5	30.08	764.0	72	22.2	75	S	2	0.9	.....	1cs	Sm'e	SW	.....	0	0	Clear	
Brackettville, Texas	28.72	729.5	29.70	754.4	74	23.3	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.60	726.4	29.56	750.8	50	10.0	93	W	16	7.2	.....	.....	10ks	.....	W	0.07	1.8	Cloudy	
Brownsville, Texas	29.78	756.4	29.83	757.7	75	23.9	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.25	742.9	29.93	760.2	70	21.1	75	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.79	756.7	30.04	763.0	68	20.0	79	Calm	0	0	.....	0	Haze	.....	.....	0	0	Hazy	
Cairo, Illinois	29.50	749.3	29.87	758.7	73	22.8	85	S	10	4.5	.....	8k	0	W	.....	0.01	0.3	Fair	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.82	681.2	30.32	770.1	52	11.1	72	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	29.93	760.2	29.94	760.5	76	24.4	81	SE	14	6.3	.....	.....	10s	.....	SW	0.21	5.3	Cloudy	
Cape Henry, Virginia	29.96	761.0	29.98	761.5	75	23.9	85	E	3	1.3	.....	.....	10s	.....	SE	Inap.	Inap	Cloudy	
Cape Lookout, N. Carolina	29.98	761.5	30.01	762.2	79	26.1	86	Calm	0	0	.....	0	2ks	.....	Calm	0.16	4.1	Fair	
Cape May, New Jersey	30.00	762.0	30.03	762.7	72	22.2	95	E	6	2.7	.....	5c	0	NW	.....	0.01	0.3	Fair	
Charleston, South Carolina	29.95	760.7	30.02	762.5	77	25.0	86	NE	2	0.9	.....	0	1s	.....	Calm	Inap.	Inap.	Clear	
Cheyenne, Wyoming	23.97	608.8	29.91	759.7	49	9.4	37	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.65	737.9	29.70	754.4	70	21.1	85	SW	4	1.8	.....	.....	10s	.....	SW	0.44	11.2	Cloudy	
Cincinnati, Ohio	29.22	742.2	29.83	757.7	69	20.6	90	SE	4	1.8	.....	0	Fog	.....	SE	0	0	Clear	
Cleveland, Ohio	29.22	742.2	29.92	760.0	68	20.0	79	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Concho, Texas	28.00	711.2	29.60	751.8	71	21.7	75	SW	4	1.8	.....	1cs	.....	SW	.....	0.03	0.8	.....	
Corsicana, Texas	29.41	747.0	29.86	758.4	76	24.4	90	S	1	0.4	.....	5ck	5s	Calm	S	0	0	Cloudy	
Davenport, Iowa	29.15	740.4	29.76	755.9	67	19.4	90	W	4	1.8	.....	1cs	0	Calm	.....	0.58	14.7	Clear	
Denison, Texas	29.10	739.1	29.86	758.4	73	22.8	85	S	4	1.8	.....	1k	0	SE	.....	0.70	17.8	Clear	
Denver, Colorado	24.76	628.9	29.98	761.5	44	6.7	44	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.18	741.2	29.82	757.4	69	20.6	90	S	7	3.1	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Dodge City, Kansas	27.36	694.9	29.63	752.6	61	16.6	72	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.03	737.3	29.69	754.1	65	18.3	89	W	2	0.9	.....	0	2s	.....	Calm	0.56	14.2	Fair	
Duluth, Minnesota	28.86	733.0	29.50	749.3	60	15.6	88	W	5	2.2	.....	.....	10ks	.....	W	1.66	42.2	Threatening	
Eagle Pass, Texas	29.08	738.6	29.79	756.7	76	24.4	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.02	762.5	30.08	764.0	56	13.3	74	NE	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Erie, Pennsylvania	29.22	742.2	29.90	759.4	70	21.1	84	S	14	6.3	.....	0	2s	.....	.....	0	0	Fair	
Escanaba, Michigan	28.95	735.3	29.55	750.6	66	18.9	94	S	10	4.5	.....	.....	10n	.....	S	0.27	6.9	Light rain	
Florence, Arizona	28.37	720.6	29.97	761.2	75	23.9	36	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.12	612.6	30.12	765.0	49	9.4	42	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.58	649.7	.....	.....	47	8.3	70	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter.	29.33	745.0	29.84	757.9	72	22.2	95	SW	1	0.4	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Fort Griffin, Texas	28.64	727.4	29.86	758.4	68	20.0	90	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.67	728.2	29.75	755.6	64	17.8	100	N	5	2.2	.....	.....	Fog	.....	Calm	0.18	4.6	Foggy	
Fort Sully, Dakota	28.06	712.7	29.69	754.1	48	8.9	70	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.83	757.7	29.87	758.7	83	28.3	74	SE	3	1.3	.....	2k	0	SE	.....	0	0	Fair	
Grand Haven, Michigan	29.08	738.6	29.70	754.4	70	21.1	75	S	17	7.6	.....	0	8s	.....	S	0	0	Cloudy	
Indianapolis, Indiana	29.08	738.6	29.82	757.4	69	20.6	79	S	7	3.1	.....	2ck	2s	SW	S	0	0	Fair	
Indianola, Texas	29.84	757.9	29.87	758.7	82	27.8	78	SE	3	1.3	.....	2k	0	S	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.97	761.2	29.99	761.7	78	25.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.17	740.9	29.74	755.4	73	22.8	81	Calm	0	0	.....	0	0	.....	.....	1.28	32.5	Clear	
Key West, Florida	29.90	759.4	29.93	760.2	85.0	29.4	71	SE	3	1.3	.....	1k	2ks	SE	SE	Inap.	Inap.	Fair	
Kittyhawk, North Carolina	29.98	761.5	30.00	762.0	74	23.3	95	SE	15	6.7	.....	1c	5s	SE	SE	0	0	Fair	
Knoxville, Tennessee	29.05	737.9	30.03	762.7	64	17.8	83	NE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Dense fog	
La Crosse, Wisconsin	28.93	734.5	29.62	752.3	65	18.3	83	SW	10	4.5	.....	0	0	.....	.....	1.15	29.2	Clear	
La Mesilla, New Mexico	26.10	662.9	30.26	768.6	56	13.3	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	80	26.7	74	SE	1	0.4	.....	5cs	0	Calm	.....	0	0	Fair	
Leavenworth, Kansas	29.00	736.6	29.82	757.4	61	16.1	77	NW	7	3.1	.....	0	0	.....	.....	0.09	2.3	Clear	
Los Angeles, California	29.58	751.3	29.92	760.0	59	15.0	44	SE	5	2.2	.....	.....	Fog	.....	.....	0	0	Foggy	
Louisville, Kentucky	29.35	745.5	29.89	759.2	69	20.6	84	S	3	1.3	.....	0	Fog	.....	S	0	0	Foggy	
Lynchburg, Virginia	29.34	745.2	30.00	762.0	72	22.2	80	Calm	0	0	.....	.....	10s	.....	W	0.18	4.6	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	55	12.8	62	E	0	0	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.56	733.0	29.51	749.5	68	20.0	84	S	12	5.4	.....	.....	10n	.....	Calm	0.21	5.3	Light rain	
Mason, Texas	28.28	718.3	30.03	762.7	71	21.7	95	NW	2	0.9	.....	5c	0	S	.....	0.09	2.3	Fair	
Memphis, Tennessee	29.61	752.1	29.91	759.7	76	24.4	81	S	3	1.3	.....	2c	1ks	SW	SW	0	0	Fair	
Milwaukee, Wisconsin	29.07	738.4	29.72	754.9	67	19.4	90	SW	4	1.8	.....	.....	8n;ks	.....	SW	0.16	4.1	Light rain	
Mobile, Alabama	29.93	760.2	29.97	761.2	78	25.6	84	S	2	0.9	.....	0	Haze	.....	.....	0	0	Clear	
Montgomery, Alabama	29.76	755.9	29.98	761.5	69.5	20.8	84	N	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Morgantown, West Virginia	28.94	735.1	29.95	760.7	70	21.1	75	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Mt. Washington, N. H.	24.04	610.6	30.40	772.1	51	10.6	93	NW	10	4.5	.....	0	8s	.....	NW	0	0	Fair	
Nashville, Tennessee	29.43	747.5	29.94	760.5	67	19.4	84	SE	2	0.9	.....	5ck	Fog	W	SE	0	0	Fair	
New Haven, Connecticut	29.97	761.2	30.08	764.0	69	20.6	95	Calm	0	0	.....	.....	10s;fg	.....	Calm	0	0	Cloudy	
New London, Connecticut	30.05	763.3	30.10	764.5	66	18.9	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.01	0.3	Dense fog	
New Orleans, Louisiana	29.87	758.7	29.93	760.2	78	25.6	86	E	2	0.9	.....	1c	0	W	.....	0	0	Clear	
Newport, Rhode Island	30.05	763.3	30.10	764.5	66	18.9	100	SW	4	1.8	.....	.....	Fog	.....	S	0	0	Dense fog	
New York, New York	29.91	759.7	30.08	764.0	71	21.7	95	NE	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Norfolk, Virginia	29.95	760.7	30.01	762.2	71	21.7	100	SE	1	0.4	.....	5k	Haze	S	Calm	0	0	Fair	
North Platte, Nebraska	27.01	686.0	29.57	751.1	46	7.8	81	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	53	11.7	73	W	14	6.3	.....	0	0	.....	.....	0.18	4.6	Clear	
Omaha, Nebraska	28.71	729.2	29.76	755.9	54	12.2	79	NW	4	1.8	.....	0	0	.....	.....	0.11	2.8	Clear	
Oswego, New York	29.68	753.9	29.99	761.7	69	20.6	79	S	6	2.7	.....	0	Haze	.....	.....	0	0	Clear	
Pembina, Dakota	28.70	729.0	29.51	749.5	49	9.4	86	W	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	29.98	761.5	30.03	762.7	71	21.7	95	E	5	2.2	.....	.....	Fog	.....	.....	0	0	Foggy	
Phœnix, Arizona	.....	.....	.....	.....	59	15.0	70	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.82	452.6	30.03	762.7	27	— 2.8	19	NW	33	14.8	.....	6	2s	.....	NW	0	0	Clear	
Pioche, Nevada	24.19	614.4	29.96	761.0	50	10.0	32	N	9	4.0	.....	0	2s	.....	Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.15	740.4	29.93	760.2	66	18.9	90	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.19	741.4	29.82	757.4	69	20.6	84	S	8	3.6	.....	0	Sm'e	.....	.....	0	0	Clear	
Portland, Maine	30.02	762.5	30.07	763.8	64	17.8	83	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Portland, Oregon	30.12	765.0	30.22	767.6	60	15.6	76	NW	4	1.8	.....	.....	10s	.....	Calm	0.27	6.9	Cloudy	
Prescott, Arizona	.....	.....	.....	.....	43	6.1	75	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.94	760.5	29.96	761.0	79	26.1	82	E	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
Red Bluff, California	29.67	753.6	30.01	762.2	73	22.8	35	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.36	745.7	29.94	760.5	70	21.1	75	SW	2	0.9	.....	0	Haze	.....	Calm	0	0	Hazy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.70	754.4	30.27	768.8	58	14.4	90	Calm	0	0			10s		Calm	0.05	1.3	Cloudy	
Sacramento, California	29.90	759.4	29.98	761.5	65	18.3	48	N	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.27	743.4	29.81	757.2	72	22.2	90	S	6	2.7			10n		Calm	0.50	12.7	Light rain	
St. Marks, Florida	29.97	761.2	29.98	761.5	73	22.8	95	Calm	0	0		0	0			0	0	Clear	
St. Paul, Minnesota	28.79	731.3	29.67	751.1	61	16.1	88	W	5	2.2			10s		Calm	1.38	35.1	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.73	653.5	30.06	763.5	54	12.2	55	SE	4	1.8		2k	2s	Calm	Calm	0.02	0.5	Fair	
San Antonio, Texas	29.18	741.2	29.73	755.1	78	25.6	86	Calm	0	0		2c	0	Calm		0	0	Clear	
San Diego, California	29.86	758.4	29.93	760.2	62	16.7	71	E	6	2.7		0	0			0	0	Clear	
Sandusky, Ohio	29.23	742.4	29.87	758.7	70	21.1	75	S	10	4.5		1c	Sm'e	Calm	Calm	0	0	Smoky	
Sandy Hook, New Jersey	30.04	763.0	30.06	763.5	71	21.7	95	E	9	4.0			Fog		Calm	0	0	Foggy	
San Francisco, California	29.92	760.0	29.98	761.5	61	16.1	71	W	1	0.4		0	Sm'e			0	0	Smoky	
Santa Fé, New Mexico	23.35	593.1	29.89	759.2	43.5	6.4	55	N	8	3.6		0	Haze			0	0	Clear	
Savannah, Georgia	29.91	759.7	30.06	762.0	77	25.0	90	E	4	1.8		2ck	Fog	W	E	2.21	56.1	Fair	
Shreveport, Louisiana	29.69	754.1	29.90	759.4	77	25.0	86	S	3	1.3			10s		S	0	0	Cloudy	
Smithville, North Carolina	30.00	762.0	30.03	762.7	73	22.8	95	N	2	0.9		5cs	0	S		0	0	Fair	
Springfield, Massachusetts	29.90	759.4	30.03	762.7	67	19.4	90	S	1	0.4			Fog		Calm	0	0	Foggy	
Stanwix, Arizona					57	13.9	53	NE				0	0			0	0	Clear	
Stockton, Texas					65	18.3	83	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	64	17.8	94	S	4	1.8		0	0			0	0	Foggy	
Toledo, Ohio	29.20	741.7	29.84	757.9	70	21.1	84	SE	6	2.7		0	Haze		Calm	0	0	Clear	
Tucson, Arizona	27.54	699.5	30.08	764.0	64	17.8	67	S				0	0			0	0	Clear	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	78	25.6	90	NE	10	4.5		5ck	0	W		0.63	16.0	Fair	
Umatilla, Oregon	29.65	753.1			63	17.2	61	W	20	8.9		0	2s		W	0	0	Clear	
Vicksburg, Mississippi	29.71	754.6	29.96	761.0	72	22.2	90	SE	6	2.7		0	0			0	0	Clear	
Virginia City, Montana	24.17	613.9	29.65	753.1	40	4.4	91	W	1	0.4			10n		W	0.06	1.5	Light rain	
Visalia, California	29.63	752.6	30.00	762.0	56	13.3	68	NE	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.90	759.4	30.01	762.2	70	21.1	100	NE	2	0.9			10s;fog		NE	0.03	0.8	Foggy	
Wickenburg, Arizona					56	13.3	30	SW				0	0			0	0	Clear	
Wilmington, N. Carolina	29.92	760.0	30.00	762.0	70	21.1	95	Calm	0	0		5k	Fog	SW	Calm	0	0	Fair	
Winnemucca, Nevada	25.79	655.0	30.15	765.8	48	8.9	56	SW	9	4.0		0	5s		Calm	0	0	Fair	
Wood's Holl, Mass	30.06	763.5	30.11	764.8	66	18.9	94	SW	1	0.4			Fog			0	0	Dense fog	
Yankton, Dakota	28.54	724.9	29.81	757.2	51	10.6	79	W	4	1.8		0	0			0.02	0.5	Clear	
Yuma, Arizona	29.72	754.9	29.88	758.9	61	16.1	16	E	4	1.8		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.16	740.7	29.21	741.9	37.0	2.8	95	SW	9	4.0		0	8s		SW	0.10	2.5	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.89	759.2	29.91	759.7	81	27.2	75	NE	3.6	1.6		0	0			0.17	4.3	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	80	26.7	86	Calm	0	0		5c	0	Calm		0.80	20.3		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.84	757.9	29.92	760.0	84.5	29.2		NE			1					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					83	28.3	83	E				2ck	5k	SE		0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.79	756.7	29.81	757.2	84	28.9	83	S				0	8ks		SE				L. V. Bigard.
Bridgetown, Barbados, W. I.	30.02	762.5	30.03	762.7	83	28.3	79	SE	0	0		5c	5ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.99	761.7	86	30.0	75	E			2	3c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			67.0	19.4	78	Calm			0		8s;ks			0.01	0.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.06	763.5	30.08	764.0	74.5	23.6		NE			4					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,633 (?) ft., or 1,412.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,323 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.10	764.5	67	19.4	61	16.1	94	Calm	0	0			0			0	0			Light haze	
Navy Yard, Pensacola, Fla.	30.10	764.5			81	27.2	78	N	4	1.8			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.13	765.3	72	22.2	66	18.9	79	SW			1		0			0	0			Foggy	
Naval Hospital, Yokohama, Japan	29.68	753.9	75	23.9	74	23.3	86	W			3		4c;k		wsw	0.28	7.1			Fair	
Adams, S. 33° 46′, W. 51° 46′	30.02	762.5	64	17.8	61	16.1	88	NW			1		9		NE	Light	Light	Light	NW	D. clouds	
Alert, Senday Bay, Japan	29.81†	757.2†	71	21.7	71	21.7	90	Calm			0		3		E			Smooth		D. clouds	
Alliance, Constantinople, Turkey	30.19	766.8	73	22.8	73	22.8	72	SSE			1		2		Calm					Clear	
Ashuelot, Che-foo, China	30.07	763.8	72	22.2	71	21.7	57	NNW			2		0							Blue sky	
Canonicus, New Orleans, La.	29.98	761.5	55	12.8	78	25.6	82	E			2		3							Fair	
Colorado, New York, N. Y.	30.05†	763.3†	71	21.7	71	21.7	95	SSE	2	0 9			10		S&W	0	0			Foggy	
Despatch, Constantinople, Turkey	30.20	767.1	75	23.9	74	23.3	95	ENE			1		0					Smooth		Clear	
Essex, Funchal, Madeira,	30.15	765.8	74	23.3	78	25.6	82	E			1		1					Smooth	SE	D clouds	
Franklin, Norfolk, Va.	30.05	763.3	66	18.9	72	22.2	??	Calm	0	0			4		Calm	0	0			Foggy	
Frolic, S. 11° 28′, W. 36° 35′	30.20	767.1	79	26.1	80	26.7	96	ENE			4		5ck		N&E	Blank	Blank	Long	N&E	D. clouds	
Gettysburg, Leghorn, Italy	29.98‡	761.5‡			83	28.3	100	SSW			2		4		Calm	0	0			D. clouds	
Kearsarge, Hong-Kong, China	29.97	761.2			83	28.3	100	Calm			0		3			0	0	Smooth		Hazy	
Lackawana, Neeah Bay, W. T.	30.12	765.0			56	13.3	75	WSW			2–3		2		S&W			Ground	WNW	D. clouds	
Marion, Smyrna, Turkey	30.02	762.5	76	24.4	75	23.9	64	WSW			4		1		Calm	0	0	Chop	wsw	D. clouds	
Michigan, Buffalo, N. Y.	29.48	748 8	75	23.9	71	21.7	75	S			1		0							Clear	
Monocacy, Yokohama, Japan	29.64	752.8	76	24.4	76	24.4	82	SSE			4		3		S&E	Heavy	Heavy			D. clouds	
New Hampshire, Port Royal, S. C.	30.18	766.6			78	25.6	82	ENE	10	4.5			5		E	1.3	33.			D. clouds	
Omaha, S. 29° 38′, W. 71° 37′	30.12	765.0	63	17.2	61	16.1	85	SE	4	1.8			4		SE	0	0	Smooth		Misty	
Onward, Callao, Peru	30.08†	764.0†	68	20.0	65	18.3	89	SE			2							Long	W	D. clouds	
Ossipee, New York, N. Y.	30.17	766.3	73	22.8	71	21.7	95	NE			2		10		Calm					Foggy	
Palos, Wanchow, China	30.01	762.2	79	26.1	74	23.3	90	ENE			2		10		Calm					Rainy	
Plymouth, New York, N. Y.	30.35	770.9	78	25.6	72	22.2	90	E			1		Haze							Foggy	
Ranger, Nagasaki, Japan	30.00	762.0			76	24.4	86	Calm			0		10		Calm					Cloudy	
Rio Bravo, Brownsville, Texas	29.76	755.9			77	25.0	95	N			1		0							Blue sky	
Santee, Annapolis, Md.	30.10	764.5	74	23.3	74	23.3	90	SE			3		4		SE	0.12	3.0			Cloudy	
St. Louis, League Island, Pa	29.99	761.7	72	22.2	73	22.8	90	NE	4	1.8			10		E	0	0			Foggy	
Tennessee, Yokohama, Japan	29.68	753.9	78	25.6	75	23.9	90	SW	6	2.7			3		S&W	0.32	8.1	Smooth		D. clouds	
Trenton, Marseilles, France	30.20	767.1	75	23.9	75	23.9	77	Calm	0	0			0			0	0			Blue sky	
Vandalia, Smyrna, Turkey	30.05	763.3	76	24.4	75	23.9	64	WNW			3–5		0							Squally	
Wabash, Boston, Mass.	30.12	765.0	70	21.1	69	20.6	85	W	1	0.4			6		Calm	0	0			Hazy	
Wyoming, Washington, D. C.	30.15†	765.8†	76	24.4	74	23.3		Calm			0		9		N					D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 39° 25′, W. 134° 23′			30.60*	777.2*	60	15.6	100	NNW			4		9		NW	Moderate.	NNW	Overcast	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio Hong Kong, China.					84	28.9		SW			2							Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			
S. S. Oceanic, N. 30° 48′, E. 131° 32′			29.87†	758.7†	78	25.6		S			4		ks		NE	Smooth		D. clouds	Capt. W. H. Kidley.
																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 49° 55′, W. 4° 13′			30.14	765.5	60.0	15.6	79	WNW			4		k		WNW	Rough	W	Clearing	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 51° 25', W. 23° 44'			29.84*	757.9*	63	17.2		SW			5		9		S	Moderate.	WSW	Foggy	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.95	760.7	79	26.1	82	ENE	4	1.8		1k	0					Clear	Capt. James Jorgenson.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 16, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.98	761.6	80.6	27.0	66	Calm			0		6			0.295	7.5	Fair	Michel.
Algiers			29.95	760.7	83.1	28.4	75	N			1		2			0	0	Clear	Peter.
La Calle			29.98	761.4	84.7	29.3	66	NNE			3		3			0	0	Fair	Fleury.
Tunis			29.99	761.7	87.8	31.0		E			3		1			0	0	Clear	Jacques.
Sfax			30.05	763.2	84.2	29.0		E			3		6			0	0	Fair	Husson.
Saida					78.3	25.7		SSW			4		2			0	0	Clear	Millot.
Tebessa			30.03	762.7	85.8	29.9		N			2		6			0.197	5.0	Fair	Bourgeois.
Geriville			29.99	761.7	75.7	24.3	82	S			3		10			0.630	16.0	Hidden	Lemaillot.
Laghouat			30.07	763.6	82.4	28.0	51	E			2		4			0.079	2.0	Fair	François.
Biskra			30.01	762.3	92.1	33.4	36	SSE			2		6			0	0	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.32	744.7	29.85	758.2	68.4	20.2	71	NE			4		10			0.181	4.6		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.04	737.5	29.80	756.8	55.0	12.8	85	NW					10			0.157	4.0		Dr. Wierzbiski.
Eperies	28.85	732.7	29.69	754.1	68.9	20.5	53	NW			1		10		S	0	0		Julius Mikolik.
Gratz	28.65	727.8	29.87	758.7	65.7	18.7	86	S			4		5			0	0		Andreas Rospini.
Hermannstadt	28.35	720.2	29.69	754.1	79.2	26.2	38	WNW			3		5			0.063	1.60		Prof. Reissenberger.
Kremsmünster	28.66	727.9	29.98	761.5	59.4	15.2	66	W			4		10			0.118	3.0		Prof. C. Wagner.
Lemberg	28.66	727.9	29.61	752.2	63.0	17.2	82	NW			3		8			0.130	3.3		Dr. T. Stanecki.
Pola	29.73	755.2	29.84	757.9	77.9	25.5	67	SSE			1		9cks			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.57	751.0	29.84	757.8	71.2	21.8	48	S			4		10			0.049	1.25		Karl Stancel.
Trieste	29.75	755.6	29.85	758.2	79.3	26.3	63	Calm			0		10			2.307	58.6		P. Busin.
Vienna	29.23	742.5	29.91	759.7	66.4	19.1	82	NW			3		7			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.71	729.2	30.21	767.4	56.1	13.4	66	WNW			2		9			0	0		Royal Observatory
Brussels	30.03	762.7	30.23	767.7	60.4	15.8	56	WNW			4		5		NW	0	0		
Furnes																			
Maeseyck	30.06	763.4	30.19	766.7	61.7	16.5	64	NW			6		5			0.083	2.1		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.14	765.5	30.24	768.1	57.0	13.9		NW	24	10.7			4			0.025	0.63	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			30.40	772.1	58.0	14.4		NW	3	1.3									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.34	770.6	58.1	14.5		NW	15	6.7			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.41	772.4	61.8	16.6		Calm			0		3					D. clouds	J. Dreyer.
Bradford, Yorkshire																0.02	0.5		J. McLandsborough.
Bridgetown, (Barbados)			29.94	760.5	84	28.9		NE			1		2					D. clouds	Pvt. G. W. Roberts, A. [H. C
Cambridge, Observatory			30.29	769.4	63.1	17.3		N			1		5					D. clouds	H. Todd.
Cardington			30.31	769.9	62.0	16.7		W			1		6					D. clouds	John McLaren.
Chatham, School M. E.	30.16	766.1	30.29	769.4	61.2	16.2		W			2		3					Hazy	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.86	733.0	30.32	770.1	62.2	16.8		NE			3		2					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.32	770.1	30.35	770.9	58	14.4		N			4		0					Blue sky	J. Mac Gowan.
Dover	30.25	768.3	30.28	769.1	61	16.1		NNW			3		0					Clear	J. Costello.
Eccles, (near Manchester)			30.30	769.6	61.5	16.4		NW	5.4	2.4			6					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.13	765.3	30.36	771.1	62.0	16.7		N			2		2					D. clouds	The Staff.
Fort Napier, (Natal)	27.92	709.2	30.16	766.1	55.3	12.9		E			3		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.94	760.5	71	21.7		Calm			0		6					Raining	
Galway, Queen's College			30.25	768.3	62	16.7		Calm			0		0					Blue sky	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.94	760.5	29.97	761.2	75.2	24.0		NE			6		5					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.01	762.2	30.22	767.6	60.2	15.7		W			1		4					Blue sky	D. G. Maclean.
Great Yarmouth	30.24	768.1	30.25	768.3	57	13.9		NNW			3		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.14	765.5	30.31	769.9	58.0	14.4		NW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	30.08	764.0	30.30	769.6	62.5	16.9		NNE			1		3					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.31	769.9	63	17.2		NE			4		2ck			0	0	Fine	M. P. Moyle.
Holyhead	30.37	771.4	30.41	772.4	57	13.9		NNW			3		1					Blue sky	John Tilston.
Jersey	30.03	762.7	30.32	770.1	63.5	17.5		NNE			2		1					Blue sky	J. Fisher.
Kew, Observatory			30.32	770.1	58.2	14.6		NNW	4	1.8			4					D. clouds	The Staff.
Kingstown	30.37	771.4	30.40	772.1	58	14.4		NW			3		6					D. clouds	George Mitchell.
Leicester, Museum			30.29	769.4	62.0	16.7		NW			1		5					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.91	759.7	29.99	761.7	85.2	29.6		NW			1		4					D. clouds	Corp'l. P. Bravis, A. H. C.
Nairn	30.18	766.6	30.27	768.8	59	15.0		NW			3		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.95	761.6	84.2	29.0		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.11	764.8	30.30	769.6	64.8	18.2		W			1		5ck		W	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.79	756.7	30.31	769.9	60.6	15.9		NNW			3		4					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.30	769.6	61	16.1		NW			1		6					D. clouds	F. Lucas
Plymouth	30.25	768.3	30.33	770.4	63.6	17.6		NE			1		0					Blue sky	John Merrifield.
Roche's Point	30.33	770.4	30.37	771.4															W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			30.24	768.1	52	11.1		NW	24	10.7			10					Snowing?	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey			29.84	757.9	80.0	26.7		SW			1		0					Blue sky	Sergt. W. H. Lyne.
Sheffield	30.08	764.0	30.32	770.1	62.6	17.0		N			3		4			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.28	769.1	30.31	769.9	66.6	19.2	65	SW			1		4			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					59.0	15.0		W			1		9					D. clouds	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			30.30	769.6	57	13.9		NW			1		2					Blue sky	John Smith.
Stratfield Turgiss	30.10	764.5	30.32	770.1	62.4	16.9		N			1		2					Hazy	Rev. C. H. Griffith, F. M. S
Thurso			30.25	768.3	52	11.1		NW			5		8					Gloomy	John Trotter.
Truro, Royal Institution			30.33	770.4	65	18.3		E			4		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.38	771.6	64.2	17.9		SSE	4	1.8			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		E			4		3			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.16	766.1	30.20	767.1	69.6	20.9	48	WNW	4	1.8		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.31	769.9	45.5	7.5	81	Calm			0		0			0	0	Clear	Francis Abbott, F. R. A. S.
Leith, Restalrig Park			30.30	769.6	60.0	15.6		NW			2		6k			0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.99	761.7	30.18	766.6	74.4	23.6	67	ESE	19.0	8.5		2	2	Calm	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.33	770.4	30.42	772.7	47.4	8.6	82	SE	4	1.8			3		SW	0.06	1.5	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.38	771.6	57	13.9		NNW			4	0	0			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.13	765.3	51	10.6		NW			6		10						Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 53° 26′, W. 4° 7′			30.35	770.9	58	14.4		NW			2		3			*0			Capt. W. Watson.
S. S. Batavia, N. 49° 55′, W. 25° 10′			29.97	761.2	61	16.1		SSE			5		9			4	S	Foggy	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 39° 50′, W. 70° 5′			30.12	765.0	73	22.8		SSE			1		7			1	SSE	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine. N. 48° 14′, W. 53° 0′			29.85	758.2	50	10.0		N			7		8			8	N	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex. Simpson

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2			68.9	20.5	95	E			1		1ck			1.3	33.	Storm	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.66	753.4	29.71	754.6	57.0	13.9	94	SE			2		10					Raining	
Fanöe	29.83	757.7	29.85	758.2	55.9	13.3	71	WNW			6		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.07	763.8	30.11	764.9	55.6	13.1	87	SE			6		10					Raining	
Thorshavn, (Faröe)	30.28	769.1	30.32	770.0	51.4	10.8	69	N			2		3						
Vestervig	29.56	750.9	29.73	755.2	55.4	13.0	91	WNW			6		9					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.73	755.2	30.28	769.2	66.2	19	30	W			3		2		W	0	0	Slightly cl'd.	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.91	759.8	29.99	761.8	73.6	23.1	44	N			8		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.68	753.8	30.24	768.2	61.7	16.5	50	NE			2		8kn		NE	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	30.00	762.1	30.29	769.3	63.1	17.3	46	NNE			2		8		N	0	0	Very cloudy	Normal School.
Besançon	29.34	745.3	30.24	768.1	61.5	16.4	66	NNE			4		8		NE	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.30	744.3	30.24	768.0	64.4	18	90	N			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.71	754.6	30.26	768.5	61.2	16.2	59	NE			4		2		NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.99	761.8	30.21	767.3	62.8	17.1	73	NE			4		7k		NE	0.010	0.25		The Staff.
Carcassonne, Normal School	29.69	754.0	30.09	764.3	82.8	28.2	56	W			4		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.93	760.2	30.24	768.2	62.1	16.7	63	N			3		5ck		N	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.83	732.2	30.16	766.1	64.2	17.9	55	NE			2		10		N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.86	745.7	30.24	768.0	57.2	14	67	NW			4		5		NW	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.82	732.0	29.96	761.0	75.0	23.9	40	NW			4		0			0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.99	761.7	30.30	769.5	62.8	17.1	52	N			2		2		NW	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.26	743.2	30.16	766.1	63.3	17.4	57	NNE			6		10		W	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.19	766.8	30.29	769.3	67.6	19.8	49	E			3		8		NE	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.63	752.7	30.24	768.1	60.8	15.7	64	NE			2		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.18	741.2	30.21	767.4	61.7	16.5	64	N			2		10		N	0	0	Covered	Normal School.
Nismes, Normal School	29.74	755.3	29.93	760.2	91.0	32.8	35	N			6		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	30.04	762.9	30.28	769.0	63.0	17.2	43	NE			2		8		NNE	0	0	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.14	765.6	30.17	766.4	70.5	21.4	45	ENE			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.22	767.5	30.30	769.7	66.4	19.1	38	NE			2		2		NE	0	0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.12	739.7	30.17	766.4	72.0	22.2	75	WNW			1		10		N	0	0	Covered	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	83.1	28.4										0	0		L'Abbé Marchésl.
Marseilles, Observatory			29.89	759.2	75.4	24.1	39	NW			6		0			0	0		The Staff.
Mont-Louis	25.02	635.5	30.34	770.5	66.0	18.9	47	WSW	3.7	1.67			4		W	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.00	761.9	30.27	768.9	63.9	17.7	43	N			3		7		N	0	0		Marié Davy, Director.
Perpignan			30.02	762.6	79.7	26.5	46	NE	26.1	11.67			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.44	544.6			53.6	12.0		NW			3		7					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.71	576.9			54.9	12.7		NW			3		7			0.142	3.6	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.03	762.8	30.20	767.0	64.4	18.0	45	NNE			2		7		N	0	0	Cloudy	E. Renou.
Toulouse, Observatory	29.43	747.5	30.16	766.0	72.1	22.3	57	NNW			3		7			0	0		The Staff.
Tours	30.05	763.3	30.25	768.3	65.3	18.5	44	E			3		2		ENE	0	0		C. Marquet.
Versailles, (near Paris)			30.28	769.1	65.5	18.6	42	NNE			1		7			0	0	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.02	762.4	30.04	763.0	67.8	19.6	87	Calm	0	0			8ks			0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 808 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.61	752.1	29.78	756.4	59.0	15.0	88	W			4		10			0.311	7.90	Raining	Prof. Arndt.
Breslau	29.30	744.2	29.83	757.6	59.2	15.1	69	W			8		10	W		0.199	5.05		Royal University Obs'y.
Carlsruhe	29.72	754.8	30.14	765.6	63.0	17.2	61	NW			1		10			0.020	0.5	Light rain	Albert Senz.
Cassel	29.50	749.2	30.12	765.0	60.4	15.8	65	WNW			8		8	WNW		0.089	2.26		Dr. H. Möhl.
Crefeld	29.97	761.3	30.13	765.4	59.9	15.5	59	NW			6		8			0.04	1.		Director Lose.
Emden	29.98	761.5	30.02	762.4	58.1	14.5	57	NW			6		1			0.354	9.0		Prof. Prestel.
Frankfort on the Main	29.80	756.8	30.15	765.9	64.4	18.0	44	NW			3		6			Inap.	Inap		Physical Society.
Friedrichshafen	28.69	728.7	30.10	764.5	64.4	18.0	83	WNW			2		5	W		0	0		M. Wilhelm.
Hamburg	29.84	757.9	29.91	759.7	55.9	13.3	83	W			7		10n			0.516	13.1	Rain-squall	Captain F. Hegemann.
Kiel	29.82	757.3	29.83	757.7	55.9	13.3	83	NW			5		10			0.496	12.59		Prof. G. Karsten.
Königsberg, (Prussia)	29.51	749.5	29.68	751.3	55.0	12.8	94	NE			1								Prof. E. Luther.
Köslin			29.70	754.3	57.2	14.0		NW			4		4			0.232	5.9		H. Müller.
Leipsic, Observatory	29.54	750.4	29.96	761.0	56.8	13.8	87	WSW			5		10	WNW		0.197	5.0	Light rain	Prof. Bruhns.
Memel, Naval School	29.58	751.4	29.63	752.6	55.0	12.8	83	NE			3		10n						Reinbrecht von Skalweit.
Neufahrwasser	29.62	752.3	29.63	752.7	57.2	14.0	87	NNW			3		10			0.504	12.8	Raining	A. Lothes.
Posen	29.46	748.3	29.75	755.6	59.0	15.0	81	W			8		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.65	753.1	30.20	767.0	62.2	16.8	55	N			3		10	W		0	0		Dr. Schur.
Stuttgart	29.20	741.7	30.14	765.6	59.0	15.0	63	W			1		8	W		0.059	1.5	Raining	Prof. Schoder.
Treves, (Trier)	29.54	750.3	30.07	763.6	61.3	16.3	70	NW			5		6			0.018	0.45		Prof. Flesch.
Weissenburg, (Bavaria)	28.60	726.5	30.10	764.6	55.8	13.2	63	W			2		8	W		0.024	0.6		Dr. Von Bebber.
Wustrow, Naval School	29.74	755.4	29.78	756.4	54.3	12.4	100	NW			3		10						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.54	750.4	29.92	760.0	80.6	27.0		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.75	755.7	29.80	757.0	83.9	28.8	71	WSW	36.0?	16.1?			5		WSW	0	0	D. clouds	
Deesa																			
Bombay	29.85	758.1	29.89	759.1	83.9	28.8	68	WNW	10.0	4.5			2			0	0	Misty	
Poona	27.81	706.4	29.80	757.0	80.9	27.2	58	NW					5		NW	0	0	D. clouds	
Lahore	28.98	736.2	29.70	754.5	95.1	35.1	35	Calm	2.1	0.9			0			0	0	Blue sky	
Belgaum	27.36	695.0	29.90	759.5	76.9	24.9	78	WNW	8.0	3.6			9	E	NW	0	0	D. clouds	
Bangalore																			
Roorkee	28.81	731.8	29.68	753.9	94.2	34.6	26	NW	3.7	1.6						0	0	Strong wind	
Agra	29.16	740.7	29.70	754.5	99.7	37.6	29	W								0	0		
Trichinopoly																			
Nagpur	28.78	730.9	29.81	757.1	85.6	29.8	55	Calm	2.8	1.2			2			0	0	D. clouds	
Madras																			
Lucknow	29.33	744.9	29.69	754.1	96.1	35.6	27	NW	4.6	2.1						0	0	Blue sky	
Allahabad	29.39	746.5	29.70	754.2	90.7	32.6	40	WSW	5.1	2.3			3		SW	0	0	D. clouds	
Patna	29.53	750.0	29.71	754.5	85.6	29.8	71	E	0.8	0.4			10	E	E	0	0	Overcast	
Hazaribagh	27.76	705.1	29.77	756.1	80.8	27.1	78	W	7.6	3.4			0			0	0	Misty	
Cuttack	29.68	754.0	29.77	756.0	79.5	26.4	86	W	5.8	2.6			3			0.61	15.5	D. clouds	
Calcutta (Alipore)	29.75	755.6	29.77	756.1	84.8	29.3	87	S	1.0	0.4			0			0.03	0.8	Showery	
Goalpara	29.34	745.1	29.72	755.0	79.8	26.6	87	S	1.8	0.8			4	SW		0.09	2.3	D. clouds	
Chittagong	29.73	755.2	29.82	757.5	82.9	28.3	83	S	2.8	1.2			8			0	0	Gloomy	
Sibsagar	29.42	747.3	29.75	755.7	82.1	27.8	87	N	2.1	0.9			10	NW	NW	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.48	723.3	29.84	757.8	83.5	25.6	68	NW	3.9	1.7						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrument'al error and temperature. Inches.	Barometer. Corrected for instrument'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.28	565.8	29.96	761.0	50.5	10.3	56	NNW			6		8	WNW		0	0		Ab. Dom. Mongini.
Stelvio	22.24	564.8	29.97	761.1	37.4	3.0		NNE			1		3	WSW		0	0		Signora Ernesta Manfredi.
Udine	29.43	747.5	29.83	757.7	75.0	23.9	61	SW	1.3	0.6			9			0	0		Prof. Giovanni Clodig.
Padua	29.71	754.6	29.82	757.3	77.2	25.1	61	NW	3.1	1.4			10			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.63	752.6	29.82	757.3	76.1	24.5	63	N	1.3	0.6			7			0	0		Conte Alm. Da Schio.
Verona	29.62	752.3	29.83	757.7	88.2	31.2	45	W			1		10			0	0		Dott. B. Bertoncelli.
Bergamo	28.56	725.4	29.84	757.8	76.6	24.8	75	SW			1		8			0	0		Prof. Trionfini Carlo.
Domodossola	28.81	731.8	29.80	756.9	78.1	25.6	40	S			4		2			0	0		Prof. Giuseppe Calza.
Milan	29.32	744.8	29.82	757.4	81.0	27.2	59	WSW			1		3	SW		0	0		Ab. Gio. Capelli.
Pavia	29.50	749.3	29.84	757.8	79.0	26.1	53	NW			2		8	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.97	736.8	29.84	758.0	79.9	26.6	41	SE	1.3	0.6			4	NW		0	0		Prof. P. F. Denza.
Mondovi	28.00	711.3	29.84	757.9	75.9	24.4	49	NW			4		2			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.64	752.9	29.85	758.3	73.0	22.8	99	E			6		6	N		0	0		Prof. L. Vassallo.
Genoa	29.72	754.9	29.89	759.1	79.2	26.2	58	SE	0.8	4.4			1	W		0	0		Prof. G. M. Garibaldi.
Placenza	29.59	751.5	29.83	757.7	77.3	25.5	59						2			0	0		Dott. G. Manzi.
Parma	29.52	749.8	29.82	757.5	82.0	27.8	48	NNW			4		4			0	0		Prof. P. Pigorini.
Florence	29.65	753.1	29.89	759.3	81.0	27.2	48	W			2		4	SW		0	0		Cav. F. Meucci.
Leghorn	29.79	756.7	29.87	758.8	79.2	26.2	63	WSW	6.9	3.1			3			0	0		Prof. P. Monte.
Siena	28.71	729.3	29.87	758.7	80.6	27.0	39	SW	0.7	0.3			5	W		0	0		Prof. L. Toscani.
Urbino	28.37	720.6	29.89	759.2	78.8	25.7	49	SW			2		4			0	0		Prof. P. Serpieri.
Pesaro	29.81	757.1	29.85	758.3	77.5	25.3	71	NE	19.2	8.6			4	SW		0	0		Prof. Luigi Guidi.
Ancona	29.73	755.2	29.84	757.8	79.2	26.2	49	SE			4		4			0	0		Prof. F. DeBosis.
Grosseto	29.83	757.6	29.93	760.3	80.6	27.0	51	SSE			4		4	S		0	0		Avv. P. Ponticelli.
Rome	29.77	756.2	29.94	760.5	80.2	26.8	56	SSW	8.1	3.6			6			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.79	756.7	29.98	761.6	81.0	27.2	57	SW			4		5	NNW		0	0		Prof. L. Palmieri.
Lecce	29.69	754.2	29.94	760.4	80.4	26.9	47	SW	15.4	6.9			7	SW		0	0		Prof. C. DeGiorgi.
Cosenza	29.11	739.5	29.97	761.1	82.8	28.2	47	NNW	1.8	0.8			5			0	0		Prof. F. D. Conti.
Cagliari	29.70	754.3	29.88	759.0	82.4	28.0	61	S			4		2	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.86	758.5	29.91	759.7	81.3	27.4	65	ESE			2		5	SE		0	0		Prof. F. Cafiero.
Palermo	29.71	754.7	29.96	760.9	79.3	26.3	61	ENE	3.6	2.5			0			0	0		Prof. G. Cacciatore.
Caltanissetta	28.06	712.6	29.91	759.8	80.1	26.7	32	W			4		2	NE		0	0		Prof. A. Pagani.
Syracuse	29.84	758.0	29.88	759.0	82.6	28.1	59	SE			6		4	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.45	748.0	30.00	762.1	79.3	26.3	55	ENE	4.9	2.2			6	NE		0.130	3.3		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokio, Japan.

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.52	749.8	29.90	759.9	71.1	21.7	95	Calm	0	0		2ck				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico.

Mexico, Central Obs'y	23.08	586.1	30.11	764.6	57.2	14.0	76	NW	0.2	0.08		1c	1s			0	0	Fair	Mariano Bárcena
																			Vicente Reyes.
																			Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.26	768.7	30.26	768.7	61.5	16.4		NNW			4					0.012	0.3		
Groningen	30.02	762.4	30.07	763.8	58.1	14.5		NNW			4					0.484	12.3		
Helder	30.14	765.6	30.14	765.6	57.6	14.2		WNW			4					0.079	2.0		
Utrecht	30.15	765.7	30.19	766.9	60.6	15.9	58	WNW			4		5			0.031	0.8	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Bergen	29.76	756.0	29.82	757.4	54.0	12.2	94	W	8.1	3.6			1			0.039	1.0		
Brönö	30.05	763.3	30.09	764.3	52.9	11.6	46	ENE	9	4			0			0	0		
Christiania	29.73	755.2	29.88	758.9	48.6	9.2	89	NE	11	5			10			0.370	9.4		
Tromsö	30.10	764.5	30.14	765.6	46.4	8.0	55	Calm	0	0			0			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.83	757.7	30.02	762.5	69.6	20.9	84	SW	1.8	0.8			3			0.118	3.0		Dr. J. A. Sampaio
Campo Major	29.01	736.9	29.98	761.4	88.5	31.4	32	E	11.9	5.3			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.01	762.2	30.10	764.4	76.8	24.9	66	SW	4.9	2.2			0			0	0		Capt. D. A. de Cuhan.
Lisbon, Observatory	29.66	753.4	30.00	762.1	84.7	29.3	35	NE	9.8	4.4			1			0	0		The Staff.
Ponta Delgada, (Azores)	30.04	762.9	30.11	764.7	75.2	24.0	82	S	6.3	2.8			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Observer.
S. S. India			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Warsaw	29.18	741.1	29.59	751.6	57.6	14.2	94	WNW	11	5			10						Astronomical Obs.
Wilna	29.15	740.5	29.56	750.9	59.0	15.0	88	SW	2	1			10						Astronomical Obs.
Dorpat	29.56	750.9	29.81	757.1	46.9	8.3	54	NE	16	7			10						Physical Cabinet.
St. Petersburg	29.84	757.9	29.85	758.3	44.8	7.1	60	NNE	11	5			8						Central Physical Obs
Kuopio	29.60	751.7	29.92	760.0	45.5	7.5	82	N	13	6			10						Ch. Forsten.
Zieff	28.94	735.0	29.54	750.3	70.0	21.1	68	SW	13	6			5						Physical Cabinet.
Nikolaiev																			Kurdakof.
Kertch	29.74	755.4	29.76	755.9	74.8	23.8	89	S	9	4			4						Lagorio.
Moscow	29.05	737.9	29.60	751.8	47.5	8.6	98	NNW	7	3			10					Raining	Meteorological Obs.
Lugan	29.54	750.3	29.74	755.4	67.3	19.6	57	WSW	13	6			6			Blank	Blank		Meteorological Obs.
Archangel	29.65	753.2	29.67	753.7	41.7	5.4	82	NNW	18	8			10					Raining	Ogorodnikof.
Tiflis	28.59	726.1	29.97	761.1	70.3	21.3	34	NW	22	10			5						Physical Observatory.
Astrakhan	29.91	759.6	29.82	757.5	62.8	17.1	79	W	7	3			10			Blank	Blank		Sebastianof.
Kasan	29.35	745.6	29.62	752.3	57.9	14.4	69	SSW	9	4			8						Physical Cabinet.
Orenburg	29.53	750.0	29.91	759.6	42.4	5.8	76	S	11	5			3						Tschernischei.
Ekaterinburg	28.90	734.0	29.84	757.8	54.1	12.3	70	SSE	4	2			9					Raining	Meteorological Obs.
Nukuss	29.72	754.9	29.95	760.7	71.2	21.8	42	NNE	7	3			4						
Kasaly																			Bobrof.
Tashkend	28.38	720.9	30.04	763.1	68.0	20.0	70	Calm	0	0			10						Michelson.
Barnaul	29.43	747.5	29.94	760.5	55.4	13.0	57	NE	2	1			9						Meteorological Obs.
Yeniseisk	29.76	756.0	29.91	759.7	52.7	11.5	91	SW	2	1			6			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.82	757.4	29.96	761.0	71.2	21.8	44	SE	18	8			2						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					54.9	12.7	93	E	4	2			10					Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	29.87	707.9			84.4	29.1	34	N	2.2	1.00		1	1	NW		0	0	Clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.92	759.8	30.00	761.9	79.4	26.3	86	SE	3.6	1.6		0	0			0.051	1.3	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.88	759.0	29.98	761.4	85.3	29.6	49	ESE	23.9	10.7		0	2		ESE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.87	758.6	85.6	29.8	79	S				2cs	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Haparanda	30.10	764.4	30.13	765.4	47.1	8.4	57	NE			4		3			0	0		
Umea	30.07	763.7	30.12	765.0	47.1	8.4	62	NNE			2		6			0	0		
Hernosand	30.02	762.6	30.08	763.9	62.6	17.0	18	E			6		7			0	0		
Stockholm	29.68	753.9	29.86	758.4	49.6	9.8	70	E			6		10			0.008	0.2		
Wisby	29.71	754.5	29.76	756.0	51.4	10.8	75	E			6		10			0.110	2.8		
Sub-Series.																			
Upsala	29.82	757.5	29.90	759.4	46.0	7.8	82	NE	9.8	4.4			10		ENE	0.167	4.25	Raining	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.68	728.4	30.07	763.7	67.1	19.5	56	NNE			2		1			0	0	Clear	The Observatory.
Zurich	28.53	724.7	30.15	765.8	60.3	15.7	68	NW			1		9			0	0	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +1.4 mm; Thermometer, +1.5 cent.; Relative Humidity, — 7 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.90	759.4	75.0	23.9	43	ESE	0	0			0			0	0		The Observatory.
Fao, (Persian Gulf)																			B. Stefanidès.
Salonica			29.91	759.6	81.1	27.3		S			1		0						A. Bertrand.
Valona			30.05	763.2	82.9	28.3		SW			1		0			0	0	Clear	Imperial Observatory.
Varna			29.84	758.0	82.4	28.0		S			2		0						
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.91	759.8	82.9	28.3	57	N			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			29.92	760.0	76	24.4		S	5	2.2		0	5s		S	0	0	Fair	W. R. Bigg.
*Chatham, N. B.			30.03	762.7	53	11.7	93	W	1	0.4		0	0			0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.			30.05	763.3	61	16.1	88	S	2	0.9			10s		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.72	754.9	29.90	759.4	73.7	23.2	76	SW			3	1cs	0	SW		0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.88	758.9			53.1	11.7	91	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	30.27	768.8	30.32	770.1	44.8	7.1	100	NE				7cs	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.01	762.2	45	7.2	100	SW	10	4.5			Fog		Calm	0	0	Foggy	J. McWilliams.
Fredericton, N. B.	30.00	762.0	30.07	763.8	60.5	15.8	91	W	1	0.4			10			0	0	Foggy	Prof. Harrison.
*Fort Garry, Manitoba			29.72	754.9	36	2.2	97	W	15	6.7		2c	2s	W	W	0	0	Fair	James Stewart.
Goderich, Ontario	29.17	740.9	29.93	760.2	69.4	20.8	88	S			2	4k	0	S		0	0	Clearing	H. J. Strang, M. A
Granton, Ontario	28.86	733.0	29.92	760.0	65	18.3	94	NW			2	2cs	0	SE		0	0	Clear	James Grant.
*Halifax, N. S.	29.93	760.2	30.06	763.5	59	15.0	95	SE	3	1.3			Fog			0	0	Foggy	F. Allison, M. A.
Hamilton, Ontario	29.59	751.6	29.95	760.7	71.2	21.8	86	W			1	8cs	0	W		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.89	759.2	29.91	759.7	42	5.6	74	N			5		4s		N	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.62	752.3	29.97	761.2	71	21.7	87	S	15	6.7		8cs	0	Calm		0.02	0.5	Fair	S. Woods, M. A
*Montreal, Quebec	29.74	755.4	29.93	760.2	71	21.7	84	S	9	4.0		2c	2ks	SW		0	0	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.23	742.4	29.91	759.7	63	17.2	99	Calm	0	0		2ck	5ks	SW	SW	0.09	2.3	Fair	Rev. R. Mosley
Peterboro, Ontario	29.18	741.2	29.90	759.4	70.7	21.5	85	Calm			0	2k	0			0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.27	743.4	29.93	760.2	69	20.6	90	W	6	2.7		10k	0	W		0	0	Fair	H. Morgan.
Port Hastings, N. S.																			Peter Grant.
Port Stanley, Ontario	29.32	744.7	29.94	760.5	67	19.4	93	W	3	1.3		8k	0	W		0	0	Fair	M. Payne.
*Quebec, Quebec	29.68	753.9	30.00	762.0	58	14.4	88	NE	3	1.3			10n		NE	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.44	747.8	29.88	758.9	64	17.8	97	NW	4	1.8			10s		NW	0.25	6.3	Light rain	W. H. McIntyre.
St. John, N. B.	29.93	760.2	30.09	764.3	58	14.4	87	Calm	0	0			Fog			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.22	742.2	29.89	759.2	67	19.4	90	Calm	0	0			Fog			0.48	12.2	Cloudy	K. Stewart.
Stayner, Ontario																			R. J. Cole.
Stratford, Ontario	28.68	728.5	29.91	759.7	65.8	18.8	93	Calm	0	0		0	0			0.038	0.97	Clear	C. L. MacGregor, M. A.
*Sydney, C. B.	30.07	763.8	30.10	764.5	51	10.6	85	Calm	0	0		10cs	0	S		0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.55	750.6	29.92	760.0	68	20.0	97	W	8	3.6			10n		SW	0.10	2.5	Light rain	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					48.0	8.9	85	N				10k	10s			0.01	0.3	Cloudy	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.81	757.2	30.03	762.7	72	22.2	90	S	3	1.3			10s		S	0	0	Cloudy	
Alpena, Michigan	29.24	742.7	29.86	758.4	63	17.2	83	Calm	0	0		0	0			0.10	2.5	Clear	
Atlantic City, New Jersey	30.04	763 0	30.06	763.5	73	22.8	95	S	1	0.4		0	0			0	0	Clear	
Augusta, Georgia	29.87	758.7	30.07	763.8	73	22.8	90	E	1	0.4		0	0			0	0	Clear	
Baltimore, Maryland	30.01	762.2	30.06	763.5	73	22.8	85	SE	2	0.9		5c	2s; fg	W	SE; Calm	0	0	Cloudy	
Barnegat, New Jersey	30.03	762.7	30.05	763.3	74	23.3	95	SE	4	1.8		0	Fog		SE	0.02	0.5	Clear	
Bismarck, Dakota	28.14	714.7	29.82	757.4	42	5.6	74	W	12	5.4		2cs	Haze	W	Calm	0	0	Clear.	
Boise City, Idaho	27.42	696.5	30.11	764.8	39	3.9	81	S	1	0.4		5c	0	Calm		0.01	0.3	Fair	
Boston, Massachusetts	29.94	760.5	30.00	764.3	70	21.1	90	SW	8	3.6			10s		SW	0	0	Cloudy	
Brackettville, Texas	28 73	729.7	29.72	754.9	74	23.3	85	Calm	0	0		2k	0	SW		0.01	0.3	Fair	
Breckenridge, Minnesota	28.85	732.8	29.86	758.4	39	3.9	91	W	5	2.2		0	2ks		W	0	0	Fair	
Brownsville, Texas	29.75	755.6	29 82	757.4	76	24.4	90	E	8	3.6			10s		E	0	0	Cloudy	
Buffalo, New York	29.23	742.4	29.91	759.7	70	21.1	84	SW	12	5.4			10n		SW	Inap.	Inap.	Light rain	
Burlington, Vermont	29.74	755.4	29.98	761.5	74	23.3	76	S	6	2.7		2c	5s	Calm	W	0	0	Fair	
Cairo, Illinois	29.60	751.8	29.98	761.5	72	22.2	95	Calm	0	0			Fog		Calm	0.94	23.9	Foggy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.80	680.7	30.30	769.6	54	12.2	43	Calm	0	0		0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.97	761.2	29.97	761.2	75	23.9	90	Calm	0	0		0	0			0.03	0.8	Clear.	
Cape Henry, Virginia	30.00	762.0	30.02	762.5	72	22.2	90	S	4	1.8			Fog		Calm	0.44	11.2	Dense fog	
Cape Lookout, N. Carolina	30.02	762.5	30.04	763.0	77	25.0	86	Calm	0	0		2k	0	SW		0	0	Fair	
Cape May, New Jersey	30.03	762.7	30.06	763.5	73	22.8	90	Ca'm	0	0		5k	0	Calm		0	0	Fair	
Charleston, South Carolina	30.01	762.2	30.07	763.8	76	24.4	90	N	6	2.7		0	2ks		E	Inap.	Inap.	Fair	
Cheyenne, Wyoming	24.16	613.6	30.10	764.5	37	2.8	71	NE	4	1.8		2ck	8s	W	W	0	0	Cloudy	
Chicago, Illinois	29.22	742.2	29.89	759.2	62	16.7	77	SW	6	2.7		0	0			0	0	Clear	
Cincinnati, Ohio	29.31	744.5	29.93	760.2	70	21.1	84	N	3	1.3			10s		Calm	0.10	2.5	Cloudy	
Cleveland, Ohio	29.29	744.0	29.98	761.5	69	20.6	60	SW	6	2.7		0	0			0	0	Clear.	
Concho, Texas	27.99	710.9	29.59	751 6	70	21.1	84	NE	4	1.8		0				0	0	Clear	
Corsicana, Texas	29.44	747.8	29.89	759.2	71	21.7	95	SE	2	0.9		2cs	0	Calm		0.08	2.0	Clear	
Davenport, Iowa	29.27	743.4	29.89	759.2	63	17.2	78	E	2	0.9		0	7ks		SW	0	0	Fair	
Denison, Texas	29.15	740.4	29.92	760.0	72	22.2	90	SE	5	2.2			Fog		Calm	0	0	Foggy	
Denver, Colorado	24.83	630.7	30.05	763.3	43	6.1	75	NE	4	1.8		0	0			0	0	Clear.	
Detroit, Michigan	29.18	741.2	29.82	757.4	64	17.8	94	S	8	3.6			10s		Calm	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.35	694.7	29.59	751.6	56	13.3	62	NE	28	12.5		2c	0	N		0	0	Clear	
Dubuque, Iowa	29.16	740.7	29.84	757.9	63	17.2	72	SW	6	2.7			10s		SW	0	0	Cloudy	
Duluth, Minnesota	29.10	739.1	29.76	755.9	53	11.7	79	NW	8	3.6		1c	0	W		0.56	14.2	Clear	
Eagle Pass, Texas	29.09	738.9	29.80	756.9	73	22.8	90	Calm	0	0		0	0			0.89	22.6	Clear	
Eastport, Maine	29.98	761.5	30.05	763.3	56	13.3	93	S	2	0.9			Fog		Calm	0	0	Foggy	
Erie, Pennsylvania	29.24	742.7	29.92	760.0	70	21.1	84	S	8	3.6		2k	5s	SW	SW	0.01	0.3	Cloudy	
Escanaba, Michigan	29.12	739.6	29.75	755.6	62	16.7	72	S	13	5.8		0	8s		S	0.04	1.0	Cloudy	
Florence, Arizona	28.29	718.6	29.89	759.2	75	23.9	36	NE				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.08	611.6	30.08	764.0	54	12.2	26	NW	4	1.8		0	0			0	0	Clear	
Fort Craig, New Mexico	25.25	649.0			49	9.4	78	NW	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.36	745.7	29.88	758.9	73	22.8	85	SE	4	1 8		0	0			0	0	Clear.	
Fort Griffin, Texas	28.64	727.4	29.86	758.4	71	21.7	90	Calm	0	0		2k	0	W		0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.67	728.2	29.72	754 9	73	22.8	81	SE	4	1.8		0	5s		E	0	0	Fair	
Fort Sully, Dakota	28.34	719.8	30.02	762 5	44	6.7	75	NW	16	7.2		2c	0	Calm		0	0	Clear	
Galveston, Texas	29.80	756.9	29.84	757.9	79	26.1	90	NE	10	4.5			10s; ks		Calm; E	0.96	24.4	Threatening	
Grand Haven, Michigan	29.25	742.9	29.88	758.9	57	13.9	93	SW	3	1.3		0	Fog		Calm	0.10	2.5	Foggy	
Indianapolis, Indiana	29.21	741.9	29.96	761.0	63	17.2	97	SW	2	0.9			Fog			0.25	6.3	Foggy	
Indianola, Texas	29.79	756.7	29.82	757.4	80	26.7	86	NE	24	10.7		8s	2ks	Calm	Calm	0	0	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	29.99	761.7	30.01	762.2	79	26.1	82	Calm	0	0		0	0			0	0	Clear.	
Keokuk, Iowa	29.29	744.0	29.88	758.9	70	21.1	71	NW	2	0.9		0	0			0	0	Clear	
Key West, Florida	29.94	760.5	29.97	761.2	84.0	28.9	75	SE	7	3.1		0	5ks		SE	Inap.	Inap.	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.05	763.3	74	23.3	95	E	2	0.9		2k	2s	SW	SW	0	0	Fair	
Knoxville, Tennessee	29.03	737.3	30.00	762.0	69	20.6	79	E	1	0.4		6ck	0	S		0	0	Cloudy	
La Crosse, Wisconsin	29.10	739.1	29.81	757.2	61	16.1	82	SW	2	0.9		5k	0	SW		0	0	Fair	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	56	13.3	39	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					78	25.6	82	S	1	0.4		5k	0	Calm		0.02	0.5	Fair	
Leavenworth, Kansas	29.04	737.6	29.85	758.2	62	16.7	83	Calm	0	0		10k	0	Calm		0	0	Cloudy	
Los Angeles, California	29.46	748.3	29.79	756.7	64	17.8	57	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.42	747.3	29.96	761.0	70	21.1	100	NE	5	2.2			Fog		Calm	0.26	6.6	Foggy	
Lynchburg, Virginia	29.38	746.2	30.04	763.0	69	20.6	79	SW	2	0.9		0	5s		W	0	0	Fair	
Maricopa Wells, Arizona					58	14.4	62	Calm				0	0			0	0	Clear.	
Marquette, Michigan	29.04	737.6	29.71	754.6	60	15.6	59	S	12	5.4			10s		SW	0.19	4.8	Cloudy	
Mason, Texas	28.28	718 3	30.00	762.0	73	22.8	90	SE	1	0.4						0.04	1.0	Cloudy	
Memphis, Tennessee	29.68	753.9	29.99	761.7	72	22.2	90	Calm	0	0		5c	5s	SW	SW	0.09	2.3	Cloudy	
Milwaukee, Wisconsin	29.24	742.7	29.91	759.7	59	15.0	76	SW	6	2.7		2ck	5ks	W	SW	Inap.	Inap.	Fair	
Mobile, Alabama	29.98	761.5	30.02	762.5	81	27.2	82	SE	6	2.7			10s		Calm	0	0	Cloudy	
Montgomery, Alabama	29.82	757.4	30.04	763.0	72.5	22.5	71	SE	1	0.4		10c	Haze	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.97	735.8	29.98	761.5	70	21.1	84	Calm	0	0			10s		SW	0	0	Cloudy	
Mt. Washington, N. H.	24.02	610.1	30.38	771.6	52	11.1	93	NW	13	5.8		8ck	5s	SW	NW	0	0	Cloudy	
Nashville, Tennessee	29.48	748.8	29.99	761.7	75	23.9	85	Calm	0	0		5ck	0	Calm		0.10	2.5	Fair	
New Haven, Connecticut	29.95	760.7	30.06	763.5	72	22.2	90	SE	4	1.8		8ck	Fog	SE	Calm	0.11	2.8	Cloudy	
New London, Connecticut	30.04	763.0	30.09	764.3	71	21.7	100	S	6	2.7			8s; fg		S	0.01	0.3	Cloudy	
New Orleans, Louisiana	29.90	759.4	29.96	761.0	80	26.7	86	E	4	1.8		8k	1ks	SE	E	0	0	Cloudy	
Newport, Rhode Island	30.04	763.0	30.09	764.3	69	20.6	100	SE	7	3.1			Fog		SW	0	0	Dense fog	
New York, New York	29.90	759.4	30.08	764.0	71	21.7	90	SE	4	1.8			10s; fg		Calm	0	0	Cloudy	
Norfolk, Virginia	30.00	762.0	30.06	763.5	69	20.6	100	SW	3	1.3			Fog		Calm	2.15	54.6	Foggy	
North Platte, Nebraska	27.17	690.1	29.74	755.4	48	8.9	67	NW	4	1.8		10k	0	NW		Inap.	Inap.	Cloudy	
Olympia, Washington Ter.	30.32	770.1	30.36	771.1	48	8.9	77	S	3	1.3		0	0			0	0	Clear	
Omaha, Nebraska	28.84	732.5	29.89	759.2	57	13.9	81	N	6	2.7		0	2s		NW	0.01	0.3	Clear.	
Oswego, New York	29.64	752.8	29.94	760.5	73	22.8	80	SE	6	2.7		8cs	0	Calm		0	0	Cloudy	
Pembina, Dakota	28.92	734.6	29.75	755.6	39	3.9	86	SW	8	3.6		0	0			0.28	7.1	Clear.	
Philadelphia, Pennsylvania	30.01	762.2	30.08	763.5	71	21.7	90	SW	1	0.4			Fog		Calm	0.07	1.8	Foggy	
Phœnix, Arizona					63	17.2	57	NE				0	0			0	0	Clear	
Pike's Peak, Colorado	17.87	453.9	30.08	764.0	25	— 3.9	60	W	32	14.3		8cs	0	W		0	0	Cloudy	
Pioche, Nevada	24.15	613.4	29.92	760.0	55	12.8	28	NW	5	2.2		0	0			0	0	Clear.	
Pittsburg, Pennsylvania	29.16	740.7	29.94	760.5	69	20.6	84	SW	2	0.9		5k	0	W		0.02	0.5	Fair	
Port Huron, Michigan	29.26	743.2	29.90	759.4	60	15.6	94	S	6	2.7			Fog		Calm	Inap.	Inap.	Foggy	
Portland, Maine	29.99	761.7	30.04	763.0	68	20.0	90	SW	10	4.5		8k	Haze	NW		0	0	Cloudy	
Portland, Oregon	30.30	769.6	30.40	772.1	47	8.3	100	S	1	0.4			Fog		Calm	0	0	Foggy	
Prescott, Arizona					59	15.0	66	S				0	0			0	0	Clear.	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	81	27.2	78	E	8	3.6		0	0			0.10	2.5	Clear	
Red Bluff, California	29.56	750.8	29.90	759.4	75	23.9	30	NW	18	8.0		0	0			0	0	Clear.	
Rochester, New York	29.31	744.5	29.90	759.4	71	21.7	80	SW	9	4.0		8c; k	0	S; SW		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.74	755.4	30.33	770.4	44	6.7	75	Calm	0	0		0	0			0.01	0.3	Clear	
Sacramento, California	29.78	756.4	29.86	758.4	66	18.9	45	N	5	2.2		0	0			0	0	Clear.	
St. Louis, Missouri	29.40	746.7	29.96	761.0	66	18.9	94	S	3	1.3			Fog		Calm	0.10	2.5	Foggy	
St. Marks, Florida	30.01	762.2	30.02	762.5	74	23.3	95	Calm	0	0		8c	0	NW		0	0	Fair	
St. Paul, Minnesota	28.97	735.8	29.77	756.1	55	12.8	80	SW	6	2.7		2c	1s	SW	SW	0.20	5.1	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	26.74	653.8	30.07	763.8	51	10.6	59	E	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.20	741.7	29.76	755.9	74	23.3	95	N	2	0.9		0	2ks		E	1.76	44.7	Clearing	
San Diego, California	29.76	755.9	29.83	757.7	63	17.2	88	Calm	0	0		0	0			0	0	Clear	
Sandusky, Ohio	29.32	744.7	29.97	761.2	68	20.0	84	SW	6	2.7			10ks		SW	0	0	Cloudy	
Sandy Hook, New Jersey	30.04	763.0	30.07	763.8	72	22.2	95	S	3	1.3			10ks		S	0.02	0.5	Cloudy	
San Francisco, California	29.79	756.7	29.85	758.2	64	17.8	83	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	49	9.4	37	NE	10	4.5		0	Haze			0	0	Clear	
Savannah, Georgia	29.97	761.2	30.06	763.5	79	26.1	86	Calm	0	0		0	0			0	0	Clear	
Shreveport, Louisiana	29.73	755.1	29.94	760.5	78	25.6	86	Calm	0	0		2c	0	Calm		Inap.	Inap.	Fair	
Smithville, North Carolina	30.06	763.5	30.09	764.3	74	23.3	85	N	3	1.3		0	0			0	0	Clear	
Springfield, Massachusetts	29.88	758.9	30.01	762.2	73	22.8	85	S	4	1.8			10ks		S	0	0	Cloudy	
Stanwix, Arizona					58	14.4	57	NE				0	0			0	0	Clear	
Stockton, Texas					63	17.2	94	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.03	762.7	30.08	764.0	65	18.3	94	SW	4	1.8						0	0	Dense fog	
Toledo, Ohio	29.30	744.2	29.95	760.7	66	18.9	90	S	5	2.2			10s		Calm	0.05	1.3	Cloudy	
Tucson, Arizona	27.53	699.2	30.08	764.0	68	20.0	64	S				0	0			1.69	42.9	Clear	
Tybee Island, Georgia	30.02	762.5	30.05	763.3	79	26.1	86	N	8	3.6		5k	0	NW		0	0	Fair	
Umatilla, Oregon	30.00	762.0			39	3.9	63	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.77	756.1	30.02	762.5	73	22.8	90	SE	8	3.6		5cs	5s	Calm	S	0	0	Cloudy	
Virginia City, Montana	24.42	620.3	29.90	759.4	35	1.7	69	NW	1	0.4		0	0			0.06	1.5	Clear	
Visalia, California	29.51	749.5	29.87	758.7	60	15.6	59	SE	4	1.8		0	0			0	0	Clear.	
Washington, D. C.	29.94	760.5	30.05	763.3	70	21.1	95	S	3	1.3			10s		S	Inap.	Inap.	Cloudy	
Wickenburg, Arizona					57	13.9	12	S				0	0			0	0	Clear.	
Wilmington, N. Carolina	29.98	761.5	30.06	763.5	74	23.3	85	Calm	0	0		0	0			0	0	Clear.	
Winnemucca, Nevada	25.79	655.0	30.15	765.8	44	6.7	59	E	10	4.5		0	0			0	0	Clear	
Wood's Holl, Mass	30.07	763.8	30.12	765.0	69	20.6	100	S	1	0.4			Fog			0	0	Foggy	
Yankton, Dakota	28.72	729.5	30.00	762.0	50	10.0	82	W	10	4.5		0	8s		SW	0.13	3.3	Cloudy	
Yuma, Arizona	29.04	752.8	29.80	756.9	66	18.9	26	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.21	741.9	29.26	743.2	36.0	2.2	95	SW	16	7.2		2c	0	NW		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.94	760.5	29.96	761.0	82	27.8	79	NE	2.4	1.1		2c	0	Calm		0.25	6.3	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	80	26.7	82	Calm	0	0		2c	2s	Calm		0.05	1.3		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.84	757.9	29.92	760.0	84	28.9		NE			1					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	SE				2c	5s	E		0	0	Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.81	757.2	29.83	757.7	85	29.4	83	SE				0	5ks		SE				L. V. Bigard.
Bridgetown, Barbados, W. I	29.97	761.2	29.99	761.7	84	28.9	79	E	3	1.3		5k	10ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.97	761.2	86	30.0	72	E			2	0	0			0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.23	640.8			67.4	19.7	82	Calm			0		9n			0.06	1.5	Light rain	Thomas Herran.
Honolulu, Oahu, H. I.	30.06	763.5	30.08	764.0	75	23.9		NE			4					0.05	1.3		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketteville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.88	758.9	67	19.4	61	16.1	100	Calm	0	0			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.15	765.8			81	27.2	81	NE	11	4.9			10			0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.13	765.3	76	24.4	72	22.2	85	Calm	0	0						0	0			Bright	
Naval Hospital, Yokohama, Japan	29.62	752.3	75	23.9	71.5	21.9	95	Calm			0		2ck		SW	0	0			Fair	
Adams, S. 34° 53′, W. 53° 30′	29.75	755.6	64	17.8	59	15.0	94	WSW			2		10		SW	Light	Light	None		Raining	
Alert, N. 38° 22′, E. 141° 25′	29.74†	755.4†	73	22.8	73	22.8	90	SE			1		10		SE					D. clouds	
Alliance, Constantinople, Turkey.	30.01	762.2	73	22.8	75	23.9	56	Var.			0–1		1		Calm					Clear	
Ashuelot, Che-foo, China	30.06	763.5	72	22.2	69	20.6	56	NNE			0–1		0					Smooth		Blue sky	
Canonicus, New Orleans, La.	30.01	762.2	56	13.3	80	26.7	91	NE			2		10		NE					Cloudy	
Colorado, New York, N. Y.	30.00†	762.0†	73	22.8	72	22.2	90	ESE	4	1.8			10		ESE	0.05	1.3			Foggy	
Despatch, Constantinople, Turkey.	30.03	762.7	76	24.4	75	23.9	60	SW			1		0							Clear	
Essex, Madeira	30.10	764.5	76	24.4	77	25.0	86	SW			2		2					Smooth	SW	D. clouds	
Franklin, Norfolk, Va.	30.08	764 0	70	21.1	71	21.7	??	NNW	4	1.8			1		WNW	1.9	48.			Foggy	
Frolic, S. 9° 18′, W. 34° 45′	30.18	766.6	80	26.7	82	27.8	83	ENE			4		5k		N&E	0	0	Moderate.	N&E	D. clouds	
Gettysburg, Naples, Italy	29.89‡	759.2‡			81	27.2	96	S			2		4		Calm	0	0			D. clouds	
Kearsarge, Hong-Kong, China	29.97	761.2			82	27.8	96	S&W			0–1		7		S&W	0	0	Smooth		Hazy	
Lackawana, Port Townsend, W. T.	30.42	772.7			54	12.2	80	Calm			0		9		SW			Smooth		D. clouds	
Marion, Smyrna, Turkey	30.02	762.5	76	24.4	76	24.4	72	W			1		0			0	0	Smooth		Blue sky	
Monocacy, Yokohama, Japan	29.62	752.3	76	24.4	75	23.9	86	W			2		1		W	0	0	Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.25	768.3			79	26.1	86	NE	5	2.2			9		NE	0	0			D. clouds	
Omaha, Coquimbo, Chili	30.10	764.5	64	17.8	60.5	15.8	85	Calm	0	0			4		Calm	0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.08	764.0	68	20.0	65	18.3	89	SSE			1		9					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.12	765.0	73	22.8	73	22.8	90	SSE			1		10		SW					Misty	
Palos, Wanchow, China	30.09	764.3	70	21.1	70	21.1	90	WNW			1		10		S&W					Rainy	
Pensacola, Mare Island, Cal.	29.99	761.7			65	18.3	89	SW			0–1		0			0	0			Pleasant	
Plymouth, New York, N. Y.	30.35	770.9	78	25.6	74	23.3	90	Calm			0		0							Pleasant	
Ranger, Nagasaki, Japan	30.00	762.0			73	22.8	67	Calm			0		4		ESE			Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.68	753.9			79	26.1	86	NW			3		10		Calm					D. clouds	
Santee, Annapolis, Md.	30.16	766.1	75	23.9	72	22.2	90	NW			1		9		SSW	0	0			Cloudy	
St. Louis, League Island, Pa	30.05	763.3	72	22.2	73	22.8	90	S	3	1.3			3		S	0.02	0.5			Fair	
Tennessee, Yokohama, Japan	29.60	751.8	77	25.0	76	24.4	86	S	2	0.9			2			0	0	Smooth		Misty	
Trenton, Marseilles, France	30.02	762.5	76	24.4	74	23.3	68	NNW	25	11.2			0			0	0			Blue sky	
Vandalia, Smyrna, Turkey	29.97	761.2	79	26.1	80	26.7	58	WNW			1		1							Hazy	
Wabash, Boston, Mass.	30.14	765.5	71	21.7	70	21.1	90	SW	5	2.2			10		Calm	0	0			D. clouds	
Wyoming, Washington, D. C.	30.18†	766.6†	74	23.3	74	23.3		Calm			0		10							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 40° 43′, W. 138° 59′			30.59*	777.0*	64	17.8	83	Var.			1		10		W	Small	NW	Overcast	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio Hong Kong, China.					88	26.3		SW			1							Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio N. 49° 10′, W. 10° 59′			30.35	770.9	64.5	18.1	70	ESE			1		k		SE	Smooth		Clearing	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 51° 33', W. 14° 55'			29.19*	741.4*	60	15.6		SE			4		8		E	Light	W	Fine	Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C			29.99	761.7	79	26.1	86	Calm	0	0		0	0					Clear	Capt. James Jorgenson.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 17, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.92	759.9	79.5	26.4	66	N			1		2			0	0	Clear	Michel.
Algiers			29.87	758.7	82.0	27.8	69	N			1		2			Inap.	Inap.	Clear	Peter.
La Calle			29.92	759.9	78.4	25.8	76	ENE			4		4			0	0	Fair	Fleury.
Tunis			29.95	760.6	93.2	34.0		E			3		1			0	0	Clear	Jacques.
Sfax			29.96	761.0	84.2	29		ENE			2		4			0	0	Fair	Husson.
Saida					82.0	27.8		SSW			2		2			0.472	12.0	Clear	Millot.
Tebessa			29.96	761.0	75.6	24.2		SSW			3		10			0.276	7.0	Hidden	Bourgeois.
Geriville			29.92	760.0	76.6	24.8	25	S			2		5			0	0	Fair	Lemaillot.
Laghouat			30.01	762.2	77.0	25.0	61	W			2		4			0.039	1.0	Fair	François.
Biskra			29.96	760.9	92.1	33.4	40	NNW			2		7			Inap.	Inap.	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Agram	29.37	746.0	29.92	760.0	53.6	12.0	83	NE			1		10			0.677	17.2	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.08	738.7	29.85	758.1	56.1	13.4	58	W					9			0.048	1.1		Dr. Wierzbiski.
Eperies	28.96	735.5	29.82	757.5	57.6	14.2	67	Calm			0		10		S	0	0		Julius Mikolik.
Gratz	28.67	728.3	29.91	759.8	56.5	13.6	78	E			2		10			0	0		Andreas Rospini.
Hermannstadt	28.41	721.5	29.78	756.4	66.2	19.0	41	NW			2		2			0	0		Prof. Reissenberger.
Kremsmünster	28.60	726.5	29.95	760.6	50.9	10.5	90	W			3		7			0.098	2.5		Prof. C. Wagner.
Lemberg	28.79	731.2	29.77	756.1	51.8	11.0	95	NW			3		10			0.075	1.9		Dr. T. Stanecki.
Pola	29.62	752.3	29.73	755.1	57.0	13.9	93	ENE			4		10ns			0.103	2.62		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.60	751.8	29.87	758.8	59.0	15.0	81				1		10			0.185	4.70		Karl Stancel.
Trieste	29.71	754.7	29.82	757.3	57.0	13.9	84	ENE			3		10			0.850	21.6		P. Busin.
Vienna	29.22	742.1	29.91	759.7	55.9	13.3	89	W			3		10			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Arlon	28.59	726.2	30.10	764.4	54.3	12.4	75	W			2		10			0	0		
Brussels	29.91	759.8	30.11	764.8	59.9	15.5	77	WNW			5		10ks		N;NNW	0.033	0.85	Light rain	Royal Observatory.
Furnes																			
Maeseyck	29.08	761.6	30.11	764.9	59.7	15.4	82	N			4		10			0.028	0.7		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.38	771.6	30.48	774.2	53.4	11.9		N	13	5.8			7			0	0	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	30.44	773.2	30.45	773.4	57	13.9		NW			2		3					Blue sky	William McNeil.
Armagh, Observatory			30.48	774.2	56.4	13.6		ENE	2	0.9			7					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.41	772.4	56.6	13.7		NNE	13	5.8			6					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.46	773 7	57.8	14.3		Calm			0		5					D. clouds	J. Dreyer.
Bradford, Yorkshire	30.01	762.2	30.40	772.1	54.9	12 7		NW			3		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)			29.90	759.4	84.8	29.3		E			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.31	769.9	55.5	13.1		N			2		10					Overcast	H. Todd. [H. C
Cardington			30.32	770.1	56.0	13.3		N			2		9					Overcast	John McLaren.
Chatham, School M. E.	30.13	765.3	30.26	768.6	57.2	14.0		N			3		7					Fine	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.88	733.5	30.36	771.1	55.0	12.8		NE			4		6					D. clouds	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.45	773.4	30.48	774.2	57	13.9		SE			3		0					Blue sky	J. Mac Gowan.
Dover	30.22	767.6	30.25	768.3	58	14.4		N			4		7					¾ clouded	J. Costello.
Eccles, (near Manchester)			30.38	771.6	57.7	14.3		NE	0.8	0.4			10					Overcast	Thomas Mackereth.
Falmouth, Observatory	30.13	765.3	30.36	771.1	57.3	14.1		E			2		9					Overcast	The Staff.
Fort Napier, (Natal)	27.82	706.6	30.05	763.3	58.1	14.5		E			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.98	761.5	84	28.9		W			0		3					D. clouds	
Galway, Queen's College			30.41	772.4	62	16.7		NE			1		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.84	757.9	29.88	758.9	75.4	24.1		E			3		3					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	30.26	768.6	30.46	773.7	57.2	14.0		NE			1		6					D. clouds	D. G. Maclean.
Great Yarmouth	30.23	767.8	30.24	768.1	57	13.9		NNW			4		7					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.12	765.0	30.29	769.4	56.3	13.5		N			4		10					Overcast	The Staff, for G. B. Airy.
Guernsey	30.07	763.8	30.29	769.4	59	15.0		NE			3		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.33	770.4	61	16.1		NE			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	30.38	771.6	30.43	772.9	56	13.3		NNE			4		1					Blue sky	John Tilston.
Jersey	30.01	762.2	30.31	769.9	60.8	16.0		NE			3		2					D. clouds	J. Fisher.
Kew, Observatory			30.31	769.9	57.4	14.1		N	14	6.3			9k					Threatening	The Staff.
Kingstown	30.43	772.9	30.46	773.7	57	13.9		E			3		9					Overcast	George Mitchell.
Leicester, Museum			30.35	770.9	58.2	14.6		N			3		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.83	757.7	29 90	759.4	85.0	29.4		SW			1		6					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	30.40	772.1	30.49	774.4	58	14 4		NW			1		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			29.92	760.0	84.8	29.3		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.18	766.6	30.37	771.4	58.9	14.9		NNW			3		10k;d		N	0.021	0.53	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.84	757.9	30.37	771.4	54.0	12.2		NNE			2		8					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.34	770.6	56	13.3		N			2		10					Overcast	F. Lucas
Plymouth	30.27	768.8	30.34	770 6	59.9	15.5		ENE			3		4					D. clouds	John Merrifield.
Roche's Point	30.37	771.4	30.41	772.4															W. Kennedy.
Saint Ann's Head	30.22	767.6	30.38	771.6	61	16.1		E			1		4					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			30.51	774.9	50.2	10.1		NW	13	5.8			10					Drizzling	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey			29.82	757.4	81.2	27.3		SW			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	30.14	765.5	30.38	771.6	55.7	13.2		NNE			2		10			0.013	0.33	Overcast	W. F. Cooper.
Silloth Rectory	30.41	772.4	30.44	773.2	58.7	14.8	66	W			3		6			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					55.1	12.8		N			1		7					D. clouds	W.C. Carlisle, for Rev. S.J. Perry.
Stornoway, Lewis C., (Hebr.)			30.49	774.4	57	13.9		Calm			0		10					Overcast	John Smith.
Stratfield Turgiss	30.11	764.8	30.33	770.4	56.0	13.3		NW			2		5					D. clouds	Rev. C. H. Griffith, F.M.S
Thurso			30.47	773.9	52	11.1		NNW			3		7					D. clouds	John Trotter.
Truro, Royal Institution			30.35	770.9	65	18.3		E			2		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.42	772.7	62.4	16.9		NE	13	5.8			2					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		E			3		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.17	766 3	30.21	767.3	64.8	18.2	59	SSE	2	0.9		2	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.04	763.0	49.0	9.4	81	Calm			0		10kn			0	0	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.50	774.7	56.0	13.3		NE			2	5ck				0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.98	761.5	30.17	766.3	75.0	23.9	70	E	17.3	7.7		3	3	S	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.07	763.8	*30.17	766.3	49.4	9.7	91	E	2	1.3			0			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.51	774.9	56	13.3		NE			3	5	5	NE		0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.36	771.1	50	10.0		NW			4	4	7	N					Robert Barnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia, N. 50° 50′, W. 18° 5′			30.30	769.6	61	16.1		SE			5		5			4	ESE	D. clouds	Capt. J. E. Monland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 39° 50′, W. 71° 35′			36.01	762.2	76	24.4		SSW			2		6			1		Raining	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine. N 48° 52′, W. 48° 8′			29.89	759.2	51	10.6		N			4		4			5	N	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller																			Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5			66.2	19.0	92	NE			1		6ck;s			1.3	33.	Storm	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.11	764.9	30.16	766.1	52.0	11.1	66	NNE			4		3						
Fanöe	30.20	767.1	30.22	767.6	53.2	11.8	63	NE			4		8						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.21	767.4	30.26	768.5	55.2	12.9	94	Calm			0		8						
Thorshavn, (Faröe)	30.35	771.0	30.39	771.9	50.5	10 3	94	NW			4		10						
Vestervig	30.10	764.6	30.27	768.9	50.0	10.0	69	ENE			2		8						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.71	754.7	30.26	768.7	64.4	18	36	NE			3		2		W	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.83	757.7	29.91	759.7	67.6	19.8	41	N			8					0	0	Light clouds	Mr. Giraud, Director.
Bar-sur-Seine	29.59	751.6	30.15	765.9	59.7	15.4	56	NE			2		8		N	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.94	760.4	30.23	767.7	59.2	15.1	65	N			3		8		N	0	0	Very cloudy	Normal School.
Besançon	29.26	743.2	30.17	766 3	58.6	14.8	52	NE			4		2		N	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.25	742.9	30.17	766.2	59.4	15.2	98	N			6		2k		N	0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.64	752.9	30.19	766.8	58.6	14.8	61	N			4		2		N	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	30.02	762.5	30.24	768.1	60.3	15.7	66	NE			4		2k		NE	0	0		The Staff.
Carcassonne, Normal School	29.66	753.4	30.07	763.7	73.9	23.3	62	W			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.84	757.8	30.15	765.8	59.2	15.1	89	NW			6		10n		N	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.77	730.7	30.11	764.9	58.5	14.7	44	NE			2		2		N	0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.27	743.5	30.15	765.9	56.1	13.4	73	W			4		2		W	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.72	729.5	29.86	758.5	72.3	22.4	35	W			2		5		NW	0	0	½ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.99	761.8	30.21	767.2	64.0	17.8	55	N			4		5		N	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.95	760.6	30.25	768.4	59.2	15.1	60	NE			2		5		NE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.22	742.3	30.10	764.5	58.1	14.5	49	NNE			6		2		W	0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	30.18	766.6	30.28	769.2	66.9	19.4	51	NNE			2		8		NE	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.39	746.5	30.07	763.8	59.2	15.1	96	NE			4		5			0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.02	737.2	30.06	763.5	59.9	15.5	71	N			1		10		NNW	0.559	14.2	Covered	Normal School.
Nismes, Normal School	29.74	755.4	29.93	760.2	90.7	32.6	37	N			6		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.96	761.0	30.20	767.0	58.6	14.8	60	NW			1		9		NW	0	0	Almost cov'd	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.11	764.9	30.15	765.7	66.9	19.4	45	NE			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.17	766.2	30.25	768.4	58.5	14.7	63	N			3		10		N	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.04	737.5	30.09	764.2	70.5	21.4	49	W			2		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	82.4	28										0.43	11.		L'Abbé Marchési.
Marseilles, Observatory			29.79	756.7	72.0	22.2	33	NW			4		5			0	0		The Staff.
Mont-Louis	24.89	632.2	30.21	767.2	61.9	16.6	17	NNE	9.3	4.17			2		WSW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.92	759.9	30.19	766.9	58.1	14.5	63	NNW			8		9			Inap.	Inap.		Marié Davy, Director.
Perpignan			29.94	760.5	73.4	23.0	42	N	18.6	8.33			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.32	541.6			44.8	7.1		S			1		3					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.59	573.7			52.0	11.1		S			1		3			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.03	762.8	30.20	767.0	61.3	16.3	64	NNW			2		7		NNE	0.012	0.3		E. Renou.
Toulouse, Observatory	29.36	745.7	30.09	764.2	66.0	18.9	34	NNW			2		1			0	0		The Staff.
Tours	30.01	762.2	30.21	767.2	62.2	16.8	52	NE			3		7		N	0	0		C. Marquet.
Versailles, (near Paris)			30.21	767.3	59.7	15.4	62	NE			2		10			Inap.	Inap.	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.04	763.1	30.07	763.8	66.0	18.9	88	Calm	0	0			9c			0	0	Lunar halo	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7. 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,580.49 m., or 5,2[illegible]8.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,268 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.: local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.82	757.4	29.99	761.7	54.0	12.2	66	E			2		10			0.289	7.34		Prof. Arndt.
Breslau	29.34	745.3	29.87	758.7	52.5	11.4	84	WNW			6		10			0.128	3.25	Raining	Royal University Obs'y.
Carlsruhe	29.61	752.1	30.03	762.8	60.8	16.0	60	SW			2		10			0.087	2.2		Albert Senz.
Cassel	29.45	748.1	30.07	763.6	55.0	12.8	77	N			8		10	N		0.245	6.22		Dr. H. Möhl.
Crefeld	29.87	758.6	30.03	762.7	63.3	17.4	58	NE			4		8kn			0.12	3.		Director Lose.
Emden	30.12	765.1	30.16	766.0	56.3	13.5	72	NE			6		9			0.193	4.9		Prof. Prestel.
Frankfort on the Main	29.70	754.4	30.07	763.6	55.6	13.1	70	W			1		9			0.142	3.6		Physical Society.
Friedrichshafen	28.65	727.6	30.07	763.8	58.6	14.8	49	SW			5		4	WSW		0.150	3.8	Raining	M. Wilhelm.
Hamburg	30.04	763.0	30.11	764.8	53.8	12.1	71	NE			5		9ks			0.165	4.2	Showery	Captain F. Hegemann.
Kiel	30.13	765.4	30.15	765.8	53.2	11.8	74	NE			4		5			0.104	2.64		Prof. G. Karsten.
Königsberg, (Prussia)	29.86	758.4	29.93	760.2	50.9	10.5	57	NE			2								Prof. E. Luther.
Köslin			30.03	762.7	51.1	10.6		NE			6		3			0	0		H. Müller.
Leipsic, Observatory	29.53	750.0	29.95	760.7	55.8	13.2	77	W			4		10	W		0.079	2.0		Prof. Bruhns.
Memel, Naval School	29.94	760.4	29.98	761.6	50.5	10.3	46	NE			5		1ck					Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.97	761.1	29.98	761.5	51.4	10.8	55	NE			5		7			0.024	0.6		A. Lothes.
Posen	29.66	753.4	29.96	761.0	46.8	8.2	93	N			3–4		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.55	750.6	30.10	764.4	60.8	16.0	50	NW			2		9	NW		0	0		Dr. Schur.
Stuttgart	29.10	739.2	30.05	763.2	55.8	13.2	62	W			1		9	W		0.035	0.9	Light rain	Prof. Schoder.
Treves, (Trier)	29.42	747.2	29.94	760.4	59.9	15.5	64	W			5		10			0.051	1.29		Prof. Flesch.
Weissenburg, (Bavaria)	28.51	724.2	30.02	762.5	52.9	11.6	59	W			2		10	NW		0.028	0.7		Dr. Von Bebber.
Wustrow, Naval School	30.09	764.3	30.14	765.5	51.4	10.8	75	NE			5		8						E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.: Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.49	749.0	29.87	758.6	81.7	27.6		SW					k					Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.78	756.3	29.83	757.6	83.9	28.8	71	SW	36.0?	16.1?			1		SW	0	0	D. clouds	
Deesa																			
Bombay	29.84	758.0	29.88	758.9	84.3	29.1	68	WNW	16.0	7.2			1			0	0	D. clouds	
Poona	27.80	706.2	29.79	756.7	81.8	27.7	63	NW					5	W	W	0	0	Thunder; lightn'g	
Lahore	28.97	735.9	29.69	754.1	95.2	35.1	33	SW	2.1	0.9			0			0	0	Blue sky	
Belgaum	27.35	694.7	29.88	758.9	78.9	26.1	83	W	6.0	2.7			8	E	W	0	0	D. clouds	
Bangalore																			
Roorkee	28.80	731.5	29.67	753.6	94.8	34.9	30	NW	4.3	1.9						0	0	Strong wind	
Agra	29.16	740.5	29.70	754.4	95.7	35.4	25	W								0	0		
Trichinopoly																			
Nagpur	28.79	731.2	29.82	757.3	86.6	30.3	54	Calm	3.7	1.6			4			0	0	D. clouds	
Madras																			
Lucknow	29.32	744.8	29.68	753.9	96.1	35.6	27	NW	5.3	2.4						0	0	Blue sky	
Allahabad	29.40	746.8	29.70	754.5	92.7	33.7	47	W	6.0	2.7			0			0	0	Blue sky	
Patna	29.53	750.2	29.71	754.6	90.3	32.4	58	Calm	0.4	0.2			4			0	0	D. clouds	
Hazaribagh	27.77	705.2	29.77	756.1	80.0	26.7	76	W	9.3	4.2			1			0	0	Blue sky	
Cuttack	29.68	753.9	29.76	756.0	84.3	29.1	67	ESE	4.6	2.1			3			0	0	D. clouds	
Calcutta (Alipore)	29.75	755.6	29.77	756.2	84.7	29.3	83	SSW	5.0	2.2			3	S		0	0	D. clouds	
Goalpara	29.36	745.7	29.74	755.5	80.6	27.0	82	S	2.1	0.9			6			0.34	8.6	D. clouds	
Chittagong	29.74	755.4	29.83	757.7	82.4	28.0	85	S	4.7	2.1			10			0	0	Gloomy	
Sibsagar	29.44	747.8	29.78	756.3	79.5	26.4	92	NE	3.4	1.5			10	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.48	723.4	29.83	757.9	83.0	28.3	68	NW	3.6	1.6						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.13	562.1	29.82	757.4	45.0	7.2	36	NW			6		2	NW		0	0		Ab. Dom. Mongini.
Stelvio	22.09	561.0	29.82	757.3	37.2	2.9		NNE			2		6	ENE		0	0		Signora Ernesta Manfredi.
Udine	29.42	747.3	29.82	757.4	58.1	14.5	65	SE	7.4	3.3			10			0.551	14.0		Prof. Giovanni Clodig.
Padua	29.72	754.8	29.82	757.5	58.3	14.6	87	NE	11.9	5.3			10			0.472	12.0		Prof. Dott. Lorenzoni.
Vicenza	29.63	752.6	29.82	757.3	58.6	14.8	88	E	2.5	1.1			9	W		0.846	21.5		Conte Alm. Da Schio.
Verona	29.56	750.9	29.78	756.3	69.8	21.0	68	WSW			1		1	NW		0	0		Dott. B. Bertoncelli.
Bergamo	28.49	723.6	29.76	756.0	67.6	19.8	87	S			2		8			0.732	18.6		Prof. Trionfini Carlo.
Domodossola	28.74	730.1	29.73	755.2	73.9	23.3	16	N			6		0			0	0		Prof. Giuseppe Calza.
Milan	29.30	744.2	29.80	756.8	69.8	21.0	72	ESE			4		6	E		0	0		Ab. Gio. Capelli.
Pavia	29.45	747.9	29.78	756.4	69.1	20.6	65	E			4		1			0	0		Prof. Gio. Cantoni.
Moncalieri	28.89	733.9	29.77	756.1	72.5	22.5	61	ESE	1.8	0.8			4	SW		0	0		Prof. P. F. Denza.
Mondovi	27.89	708 4	29.72	755.0	72.7	22.6	47	NNW			4		5	W		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.56	750.7	29.72	754.9	73.8	23.2	68	SE			2		6	NW		0	0		Prof. L. Vassallo.
Genoa	29.57	751.0	29.73	755.2	77.0	25.0	60	SW	4.9	2.2			1	W		0	0		Prof. G. M. Garibaldi.
Piacenza	29.55	750.6	29.80	756.9	64.8	18.2	61						10			0	0		Dott. G Manzi.
Parma	29.48	748.8	29.83	757.7	74.8	23.8	72	ESE			6		10			0	0		Prof. P. Pigorini.
Florence	29.46	748.3	29.71	754.5	81.1	27.3	42	NW			4		7	W		0	0		Cav. F Meucci.
Leghorn	29.66	753.3	29.74	755.4	77.0	25.0	84	W	4.3	1.9			6			0	0		Prof. P. Monte.
Siena	28.53	724.6	29.69	754.0	76.8	24.9	54	SSE	0.7	0.3			8	W		0	0		Prof. L. Toscani.
Urbino	28.24	717.3	29.76	755.9	75.4	24.1	54	NE			2		6			0	0		Prof. P. Serpieri.
Pesaro	29.66	753.4	29.71	754.6	70.7	21.5	94	W	32.2	14.4			10	SW		0.142	3.6		Prof. Luigi Guidi.
Ancona	29.58	751.4	29.69	751.0	77 0	25.0	65	NW			4		5	W		0	0		Prof. F. DeBosis.
Grosseto	29.64	752.9	29.75	755.6	79.9	26.6	55	SSE			4		6	S		0	0		Avv. P. Ponticelli.
Rome	29.60	751.8	29.77	756.1	77.2	25.1	61	SW	15,0	6.7			7			0.028	0.7		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.60	751.9	29.80	756.8	78.3	25.7	77	SW			4		9	SW		0.213	5.4		Prof. L. Palmieri.
Lecce	29.53	750.0	29.77	756.2	75.7	24.3	52	W	18.6	8.3			8	N		0	0		Prof. C. DeGiorgi.
Cosenza	29.01	736.8	29.86	758.4	80.8	27.1	51	NNW	3.1	1.4			4	ESE		0.063	1.6		Prof. F. D. Conti.
Cagliari	29.63	752.6	29.82	757.3	83.3	28.5	39	NW			4		5	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.74	755.3	29.78	756.5	80.4	26.0	64	NE			2		8	SE		0	0		Prof. F. Cafiero.
Palermo	29.56	750.9	29.81	757.1	86.9	30.5	27	WSW	16.1	7.2			1			0	0		Prof. G. Cacciatore.
Caltanissetta																			Prof. A. Pagani.
Syracuse	29.74	755.4	29.82	757.4	83.8	28.8	53	SW			6		6	W		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.27	743.4	29.82	757.5	70.2	21.2	78	NE	2.5	1.1			10	N		0.583	14.8		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokio, Japan.

Tokio (Yeddo)																			The Observatory.
Tokio (Yeddo) University	29.78	756.4	29.86	758.4	67	19.4	69	NW	6	2.7			1k			0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico.

Mexico, Central Obs'y	23.07	586.4	30.12	765.0	55.4	13.0	85	NW	2.2	0.97		3c	1s	N		0	0	Fair	Mariano Bárcena
																			Vicente Reyes.
																			Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.15	765.9	30.15	765.9	62.2	16.8		NNW			4					0.079	2.0		
Groningen	30.10	764.5	30.15	765.9	56.3	13.5		NE			3					0.169	4.3		
Helder	30.15	765.9	30.15	765.9	59.4	15.2		NE			4					0.051	1.3		
Utrecht	30.08	764.1	30.13	765.3	61.0	16.1	70	NNE			4		8			0.039	1.0	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Bergen	30.21	767.3	30.26	768.7	55.0	12.8	85	S	8.5	3.8			8			0.181	4.6		
Brönö	30.12	765.1	30.16	766.1	48.9	9.4	51	SW	4	2			5			0	0		
Christiania	30.13	765.3	30.28	769.1	50.4	10.2	53	SW	4	2			0			0	0		
Tromsö	29.91	759.6	29.95	760.7	46.0	7.8	75	SW	9	4			10			0.567	14.4		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.70	754.3	29.89	759.1	71.4	21.9	94	SSW	12.5	5.6			10			0	0		Dr. J. A. Sampaio
Campo Major	28.95	735.4	29.91	759.8	90.1	32.3	27	NE	6.3	2.8			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.95	760.8	30.04	763.0	77.4	25.2	68	SW	3.1	1.4			2			0	0		Capt. D. A. de Cuhan.
Lisbon, Observatory	29.55	750.6	29.89	759.3	84.7	29.3	49	S	6.3	2.8			0			0	0		The Staff.
Ponta Delgada, (Azores)	29.93	760.2	30.00	762.0	73.4	23.0	90	S	9.4	4.2			10			0.016	0.4		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India Ponta Delgada.			30.02	762.4	73.8	23.2	71	SSW			3		10		SSW	5		Overcast	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.39	746.5	29.82	757.3	47.1	8.4	92	NE	11	5			10					Raining	Astronomical Obs.
Wilna	29.44	747.8	29.86	758.5	50.0	10.0	58	ENE	9	4			2						Astronomical Obs.
Dorpat	29.75	755.6	30.00	761.9	46.9	8.3	63	NNE	7	3			3						Physical Cabinet.
St. Petersburg	29.95	760.6	29.96	761.0	45.7	7.6	62	NNE	11	5			7						Central Physical Obs
Kuopio	29.67	753.6	30.00	761.9	44.6	7.0	78	N	13	6			5						Ch. Forsten.
Kieff	28.93	734.9	29.55	750.6	58.3	14.6	84	WSW	13	6			10					Raining	Physical Cabinet.
Nikolaiev	29.69	754.1	29.76	755.9	71.6	22.0	47	WNW	9	4			2						Kurdakof.
Kertch	29.75	755.7	29.77	756.2	74.3	23.5	90	S	9	4			6						Lagorio.
Moscow	29.25	743.0	29.80	757.0	47.5	8.6	55	WNW	11	5			8						Meteorological Obs.
Lugan	29.42	747.3	29.62	752.3	61.2	16.2	93	SW	13	6			10			Blank	Blank		Meteorological Obs.
Archangel	29.63	752.5	29.65	753.0	43.7	6.5	80	NW	34	15			8						Ogorodnikof.
Tiflis	28.60	726.3	29.95	760.8	77.5	25.3	36	Calm	0	0			0						Physical Observatory.
Astrakhan	29.98	761.5	29.90	759.4	71.8	22.1	62	SSW	9	4			4						Sebastianof.
Kasan	29.41	747.1	29.69	754.0	46.9	8.3	70	NNE	2	1			9						Physical Cabinet.
Orenburg	29.66	753.4	30.04	763.0	47.5	8.6	78	S	13	6			10					Raining	Tschernischei.
Ekaterinburg	28.66	733.0	29.79	756.6	59.4	15.2	46	SSE	7	3			6						Meteorological Obs.
Nukuss	29.76	755.8	29.98	761.6	71.4	21.9	55	NNE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.44	722.4	30.11	764.8	66.6	19.2	86	Calm	0	0			3						Michelson.
Barnaul	29.45	747.9	29.96	760.9	57.4	14.1	57	NW	0	0			10						Meteorological Obs.
Yeniseisk	29.87	758.8	30.02	762.5	53.6	12.0	87	WNW	2	1			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.71	754.5	29.85	758.1	72.9	22.7	60	Calm	0	0			1						Physical Observatory. Meteorological Obs.
Nertchinsk																			
Vladivostock																			
Nikolaievsk, on the Amoor					53.1	11.7	95	Calm	0	0			10					Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.74	704.6			82.8	28.2	35	N	4.5	2.00		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.87	758.8	29.96	760.9	80.0	26.7	85	Calm	0	0		0	0			0	0	Clear	Benito Viñes, S. J.
San Fernando, Naval Obs'y.	29.79	756.6	29.88	759.0	88.0	31.1	47	ESE	15.0	6.7		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.83	757.7	84.2	29.0	81	S				1cs	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Haparanda	30.07	763.7	30.11	764.7	44.6	7.0	71	S			2		0			0	0		
Umea	30.10	764.4	30.15	765.7	52.5	11.4	50	NW			2		0			0	0		
Hernosand	30.13	765.3	30.18	766.6	55.8	13.2	57	W			2		2			0	0		
Stockholm	29.95	760.7	30.13	765.2	50.4	10.2	44	NNE			4		5			0	0		
Wisby	29.84	757.9	29.90	759.4	45.7	7.6	80	ENE			7		10					Raining	
SUB-SERIES.																			
Upsala	30.09	764.3	30.17	766.2	49.5	9.7	73	N	11.0	4.9			8		NNE	0.053	1.34	Raining	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.61	726.6	30.01	762.3	61.0	16.1	40	NE			3		1			0	0	Clear	The Observatory.
Zurich	28.46	722.8	30.09	764.2	56.5	13.6	59	NW			1		4			0.039	1.0	Bright	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —0.4 mm; Thermometer, —1.8 cent.; Relative Humidity, —23 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.87	758.7	77.2	25.1	53	SW	4	2.0			2		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.87	758.7	76.6	24.8		SE			1		10						B. Stéfanidès.
Valona			29.94	760.5	78.4	25.8		S			2		10			0	0	Covered	A. Bertrand.
Varna			29.76	756.0	82.4	28.0		SE			2		0						Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.91	759.7	83.6	28.6	71	N			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	29.80	756.9	29.87	758.7	62.4	16.9	91	NE	3	1.3			10			0	0		Hon. J. Ferguson.
Brockville, Ontario			29.89	759.2	71	21.7		SW	3	1.3		2c	0	S		0	0	Fair	W. R. Bigg.
*Chatham, N. B.			29.89	759.2	65	18.3	97	W	5	2.2		2c	5s	W	W	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			29.92	760.0	64	17.8	93	SW	3	1.3			10s		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.67	753.6	29.85	758.2	67.0	19.4	80	SW			2	7c	0	W		0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.86	758.4	29.90	759.4	58.8	14.9	96	NW			1					0	0	Threatening	H. A. Johnson
Esquimault, B. C.	30.20	767.1	30.25	768.3	47.3	8.5	100	Calm				4cs	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			29.89	759.2	46	7.8	96	W	4	1.8			Fog		Calm	0	0	Foggy	J. McWilliams.
Fredericton, N. B.	29.87	758 7	29.93	760.2	70.1	21.2	87	W	2	0.9			10s			0	0	Foggy	Prof. Harrison.
*Fort Garry, Manitoba			29.92	760.0	36	2.2	90	W	11	4.9		2k	5ks	W	W	0	0	Clearing	James Stewart.
Goderich, Ontario	29.16	740.7	29.93	760.2	63.9	17.7	73	SW			3	6k	4n	SW		0.026	0.66	Cloudy	H. J. Strang, M. A
Granton, Ontario	28.84	732.5	29.91	759.7	60	15.6	94	W			1	10k	0	E		0	0	Cloudy	James Grant.
*Halifax, N. S.	29.82	757.4	29.95	760.7	65	18.3	97	SW	6	2.7			Fog			0	0	Foggy	F. Allison, M. A.
Hamilton, Ontario	29.55	750.6	29.91	759.7	64.9	18.3	87	W			1	8c	0	W		0	0	Clearing	Geo. Dickson, M. A
Heart's Content, N. F.	30.01	762.2	30.03	762.7	49	9.4	71	W			3	0	2s			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.58	751.3	29.94	760.5	69	20.6	89	S	11	4.9		5c	0	Calm		0	0	Clear.	S. Woods, M. A
*Montreal, Quebec	29.69	754.1	29.88	758.9	72	22.2	72	SW	7	3.1		Haze	Sm'e			0.01	0.3	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.19	741.4	29.86	758.4	64	17.8	83	W	11	4.9		2ck	2ks	W	W	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.16	740.7	29 89	759.2	59.7	15.4	97	Calm			0		Fog			0.16	4.1	Dense fog	J. F. Jeffers, B. A.
Port Dover, Ontario	29.22	742.2	29.90	759.4	59	15.0	94	N	5	2.2		10k	0	SW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.90	759.4	29.95	760.7	63.2	17.3		Calm	0	0						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.28	743.7	29.91	759.7	63	17.2	86	NW	3	1.3		8k	0	SW		0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.61	752.1	29.92	760.0	66	18.9	94	Calm	0	0			Fog			0	0	Foggy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.40	746.7	29.85	758.2	60	15.6	85	SW	3	1.3		5ck	0	W		0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.81	757.2	29.97	761.2	58	14.4	94	Calm	0	0			Fog		W	0.03	0.8		G. Murdock, C. E.
*Saugeen, Ontario	29.20	741.7	29.89	759.2	61	16.1	75	NW	5	2.2			10ks			0.07	1.8	Cloudy	K. Stewart.
Stayner, Ontario			29.88	758.9	65	18.3	73	NW	5	2.2		10ck	0	W		0.03	0.8	Cloudy	R. J. Cole.
Stratford, Ontario	28.65	727 7	29.89	759.2	59.9	15.5	95	NW	3	1.3			10s			0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.93	760.2	29.96	761.0	63	17.2	95	SW	4	1.8			10n			Inap.	Inap.	Cloudy	T. C. Hill.
*Toronto, Ontario	29.52	749.8	29.89	759.2	64	17.8	86	NW	7	3.1		5cs	5ks	W	W	0.01	0.3	Cloudy	Magnet'c Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					51.5	10.8	52	NW				10k	10s			0.01	0.3	Cloudy	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.74	755.4	29.95	760.7	70	21.1	90	S	4	1.8			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.24	742.7	29.88	758.9	55	12.8	87	W	5	2.2		0	8s		W	0.42	10.7	Fair	
Atlantic City, New Jersey	29.97	761.2	29.99	761.7	74	23.3	90	Calm	0	0		0	5s		S	0	0	Fair	
Augusta, Georgia	29.83	757.7	30.01	762.2	75	23.9	86	SE	1	0.4		5ck	0	SE		0	0	Fair	
Baltimore, Maryland	29.93	760.2	29.98	761.5	72	22.2	90	SE	4	1.8			10s;fg		Calm	0	0	Foggy	
Barnegat, New Jersey	29.96	761.0	29.98	761.5	72	22.2	100	S	2	0.9			Fog		Calm	0	0	Dense fog	
Bismarck, Dakota	28.35	720.1	30.07	763.8	37	2.8	66	W	8	3.6		0	1s		W	0	0	Clear	
Boise City, Idaho	27.41	696.2	30.11	764.8	39	3.9	81	S	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.83	757.7	29.98	761.5	71	21.7	85	SW	12	5.4			10s		SW	Inap.	Inap.	Cloudy	
Brackettville, Texas	28.76	730.5	29.75	755.6	76	24.4	81	Calm	0	0		2k	0	Calm		0	0	Fair	
Breckenridge, Minnesota	29.06	738.1	30.09	764.3	37	2.8	71	W	10	4.5		1k	0	W		Inap.	Inap.	Clear	
Brownsville, Texas	29.72	754.9	29.79	756.7	78	25.6	77	NW	6	2.7			10s		Calm	0	0	Cloudy	
Buffalo, New York	29.17	740.9	29.86	758.4	63	17.2	72	Calm	0	0		5c	Fog	Calm	Calm	Inap.	Inap	Foggy	
Burlington, Vermont	29.69	754.1	29.93	760.2	69	20.6	90	S	3	1.3		0	0			0.09	2.3	Clear	
Cairo, Illinois	29.73	755.1	30.12	765.0	64	17.8	62	N	21	9.4			10s		N	0.05	1.3	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.79	680.4	30.29	769.4	56	13.3	62	Calm				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.94	760.5	29.94	760.5	75	23.9	90	NE	4	1.8		0	0			0	0	Clear	
Cape Henry, Virginia	29.98	761.5	30.00	762.0	72	22.2	85	SE	3	1.3		0	2s		SE	0	0	Clear	
Cape Lookout, N. Carolina	29.99	761.7	30.00	762.0	80	26.7	70	SW	1	0.4		8k	0	SW		0	0	Cloudy	
Cape May, New Jersey	29.97	761.2	30.00	762.0	71	21.7	95	SE	2	0.9		0	Fog		SE	0	0	Light fog	
Charleston, South Carolina	29.96	761.0	30.02	762.5	78	25.6	86	N	3	1.3		0	Sm'e		Calm	Inap.	Inap.	Clear	
Cheyenne, Wyoming	24.27	616.4	30.21	767.3	28	— 2.2	88	N	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.36	745.7	30.04	763.0	56	13.3	69	NW	6	2.7		0	0			0.26	6.6	Clear	
Cincinnati, Ohio	29.26	743.2	29.88	758.9	66	18.9	73	N	14	6.3		1cs	8ks	N	N	0.05	1.3	Clearing	
Cleveland, Ohio	29.21	741.9	29.91	759.7	65	18.3	73	SW	3	1.3			10s		N	0	0	Cloudy	
Concho, Texas	28.08	713.2	29.70	754.4	69	20.6	84	N	18	8.0		8cs		N		0	0	Clear	
Corsicana, Texas	29.46	748.3	29.92	760.0	73	22.8	90	NE	7	3.1		Haze	8s	Calm	NE	0	0	Cloudy	
Davenport, Iowa	29.53	750.0	30.17	766.3	52	11.1	72	NW	6	2.7		0	0			Inap.	Inap.	Clear	
Denison, Texas	29.27	743.4	30.05	763.3	63	17.2	83	NW	12	5.4			10s		NW	0	0	Cloudy	
Denver, Colorado	25.03	635.8	30.25	768.3	38	3.3	63	NW	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.25	742.9	29.90	759.4	63	17.2	67	NW	5	2.2			10s		NW	0	0	Cloudy	
Dodge City, Kansas	27.68	703.1	30.02	762.5	44	6.7	75	NE	10	4.5		2c	0	Calm		0	0	Clear	
Dubuque, Iowa	29.43	747.5	30.13	765.3	49	9.4	57	NW	2	0.9		0	0			Inap.	Inap.	Clear	
Duluth, Minnesota	29.26	743.2	29.94	760.5	45	7.2	75	Calm	0	0		Haze	1s	Calm	Calm	Inap.	Inap.	Hazy	
Eagle Pass, Texas	29.13	739.9	29.84	757.9	74	23.3	81	NE	1	0.4		2cs	0	Calm		0	0	Fair	
Eastport, Maine	29.87	758.7	29.94	760.5	57	13.9	100	S	4	1.8			Fog		Calm	0.04	1.0	Foggy	
Erie, Pennsylvania	29.17	740.9	29.85	758.2	68	20.0	74	S	13	5.8		8c	2cs	SW		0	0	Cloudy	
Escanaba, Michigan	29.29	744.0	29.95	760.7	46	7.8	77	W	9	4.0		0	0			0.02	0.5	Clear	
Florence, Arizona	28.28	718.3	29.88	758.9	79	26.1	39	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.14	613.1	30.14	765.5	55	12.8	27	NW	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.64	651.2			59	15.0	48	W	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.56	750.8	30.10	764.5	62	16.7	61	NE	10	4.5		2cs	5s	W	NW	Inap.	Inap.	Fair	
Fort Griffin, Texas	28.82	732.0	30.06	763.5	68	20.0	90	E	10	4.5			10ks		E	0	0	Threatening	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.91	734.3	30.02	762.5	55	12.8	87	NE	16	7.2		2cs	5s	Calm	W	2.08	52.8	Clearing	
Fort Sully, Dakota	28.53	724.6	30.25	768.5	40	4.4	64	N	2	0.9		0	0			0	0	Clear	
Galveston, Texas	29.58	751.3	29.62	752.3	76	24.4	100	NE	24	10.7			10n		Calm	5.37	136.4	Light rain	
Grand Haven, Michigan	29.35	745.5	29.98	761.5	59	15.0	54	NW	22	9.8		0	4ks		NW	0.33	8.4	Fair	
Indianapolis, Indiana	29.24	742.7	30.00	762.0	60	15.6	70	N	11	4.9			10s		NW	0.10	2.5	Cloudy	
Indianola, Texas	29.64	752.8	29.67	753.6	79	26.1	90	N	48	21.5			10ks		E	0.10	2.5	Threatening	
Jacksboro, Texas																			
Jacksonville, Florida	29.97	761.2	29.99	761.7	78	25.6	82	Calm	0	0		2c	0	W		0	0	Clear	
Keokuk, Iowa	29.53	750.0	30.14	765.5	59	15.0	70	N	2	0.9		0	1s		Calm	0.31	7.9	Clear	
Key West, Florida	29.91	759.7	29.96	761.0	84.0	28.9	73	NE	7	3.1		5k	0	NE		Inap.	Inap.	Fair	
Kittyhawk, North Carolina	29.98	761.5	30.01	762.2	73	22.8	100	NE	2	0.9		0	2ks		NE	0	0	Fair	
Knoxville, Tennessee	29.00	736.6	29.97	761.2	70	21.1	95	SE	4	1.8			10ks		W	0.02	0.5	Cloudy	
La Crosse, Wisconsin	29.35	745.5	30.08	764.0	50	10.0	64	W	6	2.7		0	0			0	0	Clear	
La Mesilla, New Mexico	26.13	663.7	30.28	769.1	61	16.1	35	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					76	24.4	76	NW	6	2.7		10cs	0	Calm		0	0	Cloudy	
Leavenworth, Kansas	29.38	746.2	30.23	767.8	53	11.7	79	N	2	0.9		0	0			0.01	0.3	Clear	
Los Angeles, California	29.49	749.0	29.82	757.4	65	18.3	90	NE	3	1.3			Fog			0	0	Foggy	
Louisville, Kentucky	29.43	747.5	29.97	761.2	66	18.9	78	N	22	9.8		2c	8s	NE	N	0.13	3.3	Clearing	
Lynchburg, Virginia	29.29	744.0	29.94	760.5	74	23.3	81	SW	2	0.9			10s		W	0	0	Cloudy	
Maricopa Wells, Arizona					60	15.6	53	SE				2k	0	SW		0	0	Clear	
Marquette, Michigan	29.17	740.9	29.86	758.4	47	8.3	62	SW	4	1.8		0	0			0	0	Clear	
Mason, Texas	28.43	722.1	29.58	751.6	69	20.6	90	E	3	1.3		5c	2s	E		0	0	Fair	
Memphis, Tennessee	29.76	755.9	30.08	764.0	64	17.8	88	N	12	5.4			10n		N	0.17	4.8	Heavy rain	
Milwaukee, Wisconsin	29.40	746.7	30.09	764.3	50	10.0	64	W	10	4.5		0	0			Inap.	Inap.	Clear	
Mobile, Alabama	29.92	760.0	29.96	761.0	82	27.8	81	E	6	2.7			10s		Calm	0.60	15.2	Cloudy	
Montgomery, Alabama	29.75	755.6	29.98	761.5	76	24.4	72	Calm	0	0		10c;ck	Haze	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.86	733.0	29.87	758.7	68	20.0	90	Calm	0	0			10s		SW	0	0	Threatening	
Mt. Washington, N. H.	23.95	608.3	30.31	769.9	52	11.1	93	SW	14	6.3		0	2s		SW	0.08	2.0	Clear	
Nashville, Tennessee	29.43	747.5	29.94	760.5	71	21.7	90	Calm	0	0			10n		Calm	1.83	46.5	Light rain	
New Haven, Connecticut	29.86	758.4	29.97	761.2	74	23.3	85	SW	8	3.6			10s;fg		Calm	0	0	Cloudy	
New London, Connecticut	29.96	761.0	30.01	762.2	72	22.2	95	S	4	1.8		0	10s		S	0.40	10.2	Cloudy	
New Orleans, Louisiana	29.84	757.9	29.90	759.4	80	26.7	86	E	7	3.1			10s;ks		S; SE	0.01	0.3	Threatening	
Newport, Rhode Island	29.96	761.0	30.01	762.2	70	21.1	100	SW	2	0.9			Fog		SW	0.07	1.8	Dense fog	
New York, New York	29.82	757.4	29.99	761.7	68	20.0	100	S	2	0.9			Fog		Calm	0	0	Foggy	
Norfolk, Virginia	29.94	760.5	29.99	761.7	71	21.7	100	SE	4	1.8			Fog		Calm	0	0	Foggy	
North Platte, Nebraska	27.37	695.2	30.02	762.5	41	5.0	83	N	3	1.3		10k	0	NW		0	0	Cloudy	
Olympia, Washington Ter.	30.20	767.1	30.24	768.1	41	5.0	91	S	3	1.3		0	0			0	0	Clear	
Omaha, Nebraska	29.14	740.1	30.25	768.3	46	7.8	76	W	4	1.8		0	0			0	0	Clear	
Oswego, New York	29.59	751.6	29.90	759.4	65	18.3	94	SE	6	2.7			Fog		Calm	0	0	Foggy	
Pembina, Dakota	29.14	740.1	29.98	761.5	39	3.9	90	NW	8	3.6		8k	0	NW		0	0	Fair	
Philadelphia, Pennsylvania	29.93	760.2	29.98	761.5	70	21.1	95	S	4	1.8			Fog			0	0	Foggy	
Phœnix, Arizona					63	17.2	67	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	18.01	457.4	30.22	767.6	22	— 5.6	72	W	24	10.7		5c	Haze	W		0	0	Fair	
Ploche, Nevada	24.21	614.9	29.98	761.5	50	10.0	39	NW	12	5.4		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.08	738.6	29.86	758.4	65	18.3	94	NW	2	0.9		5k	Fog	W	Calm	0	0	Fair	
Port Huron, Michigan	29.25	742.9	29.89	759.2	62	16.7	71	NW	4	1.8			10ks		NW	0	0	Cloudy	
Portland, Maine	29.69	759.2	29.94	760.5	68	20.0	94	SW	3	1.3			Fog		Calm	0	0	Foggy	
Portland, Oregon	30.16	766.1	30.26	768.6	62	11.1	79	N	4	1.8		0	0			0	0	Clear	
Prescott, Arizona					58	14.4	48	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	81	27.2	74	NE	6	2.7		0	0			0	0	Clear	
Red Bluff, California	29.50	749.3	29.84	757.9	78	25.6	19	N	12	5.4		0	0			0	0	Clear	
Rochester, New York	29.26	743.2	29.86	758.4	62	16.7	71	SW	8	3.6		5c	0	SW		0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.62	752.3	30.20	767.1	43	6.1	91	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.76	755.9	29.84	757.9	62	16.7	56	N	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.68	753.9	30.25	768.3	57	13.9	87	NW	8	3.6			10s		Calm	0.23	5.8	Cloudy	
St. Marks, Florida	29.97	761.2	29.98	761.5	77	25.0	90	NW	1	0.4			10s		E	0	0	Cloudy	
St. Paul, Minnesota	29.20	741.7	30.04	763.0	43	6.1	91	SW	8	3.6		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.83	656.1	30.16	766.1	46	7.8	54	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.16	740.7	29.72	754.9	74	23.3	81	N	6	2.7		2c	5s	Calm	Calm	0	0	Fair	
San Diego, California	29.80	756.9	29.87	758.7	63	17.2	94	Calm	0	0			Fog			0	0	Foggy	
Sandusky, Ohio	29.26	743.2	29.91	759.7	67	19.4	60	N	24	10.7			10s		Calm	0	0	Cloudy	
Sandy Hook, New Jersey	29.97	761.2	29.99	761.7	72	22.2	90	S	2	0.9			Fog			0	0	Dense fog	
San Francisco, California	29.79	756.7	29.85	758.2	65	18.3	78	N	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.44	595.4	29.98	761.5	44.5	6.9	71	SW	1	0.4		0	Haze			0	0	Hazy	
Savannah, Georgia	29.92	760.0	30.01	762.2	78	25.6	86	Calm	0	0		2ck	0	W		0	0	Clear	
Shreveport, Louisiana	29.73	755.1	29.94	760.5	75	23.9	90	NE	5	2.2			10s		N	0.17	4.3	Cloudy	
Smithville, North Carolina	29.99	761.7	30.03	762.7	75	23.9	85	Calm	0	0		0	Haze		Calm	0	0	Clear	
Springfield, Massachusetts	29.79	756.7	29.92	760.0	72	22.2	85	S	3	1.3			10s		S	0.02	0.5	Cloudy	
Stanwix, Arizona					62	16.7	57	Calm	0	0		0	0			0	0	Clear	
Stockton, Texas					63	17.2	72	W	4	1.8		1k	0	Calm		0	0	Clear	
Thatcher's Island, Mass	29.91	759.7	29.96	761.0	66	18.9	94	SW	12	5.4		0	0			0	0	Foggy	
Toledo, Ohio	29.28	743.7	29.94	760.5	64	17.8	67	NW	4	1.8			10s		SW	0	0	Cloudy	
Tucson, Arizona	27.58	700.5	30.13	765.3	71	21.7	60	SE				0	2ks		SE	0	0	Fair	
Tybee Island, Georgia	29.97	761.2	30.00	762.0	81	27.2	82	NE	4	1.8		5k	0	E		0	0	Fair	
Umatilla, Oregon	29.94	760.5			39	3.9	63	SE	8	3.6		0	0			0	0	Clear	
Vicksburg, Mississippi	29.73	755.1	29.98	761.5	72	22.2	100	E	6	2.7			10n		E	0.18	4.6	Light rain	
Virginia City, Montana	24.49	622.0	29.97	761.2	30	—1.1	48	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.49	749.0	29.85	758 2	61	16.1	55	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	29.85	758.2	29.96	761.0	73	22.8	90	S	3	1.3		2ck	5s;fog	W	S	0	0	Cloudy	
Wickenburg, Arizona					58	14.4	23	S				0	0			0	0	Clear	
Wilmington, N. Carolina	29.93	760.2	30.00	762.0	75	23.9	90	Calm	0	0		0	0			0	0	Clear	
Winnemucca, Nevada	25.83	656.1	30.19	766.8	40	4.4	40	NE	10	4.5		0	0			0	0	Clear	
Wood's Holl, Mass	29.98	761.5	30.04	763.0	70	21.1	100	SW	4	1.8			Fog			0	0	Dense fog	
Yankton, Dakota	28.98	736.1	30.31	769.9	41	5.0	74	W	8	3.6		0	0			0	0	Clear	
Yuma, Arizona	29.62	752.3	29.78	756.4	65	18.3	25	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.26	743.2	29.31	744.5	35.5	1.9	100	SW	9	4.0			10n					Raining	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.91	759.7	29.93	760.2	84	28.9	79	E	2.4	1.1		0	0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.06	763.5	30.07	763.8	81	27.2	87	Calm	0	0		2c	2ks	Calm		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.81	757.2	29.89	759.2	84	28.9		E			1					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					85	29.4	83	Calm				2ck	4s	E		Inap.	Inap.	Fair	G. O. Gellich
Pt-a-Pitre, G'd'loupe, W. I.	29.76	755.9	29.78	756.4	82	27.8	87	E				0	5k		E				L. V. Bigard.
Bridgetown, Barbados, W. I	29.96	761.0	29.98	761.5	83	28.3	79	E				0	0			0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.95	760.7	85	29.4	72	E			2	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			67.0	19.4	84	Calm			0		10n;s			0.59	15.0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.06	763.5	30.08	764.0	74	23.3		NE			3					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.96	761.0	67	19.4	63	17.2	94	Calm	0	0			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.13	765.3			83	28.3	83	NE	3	1.3			7			0.81	20.6			D. clouds	
Navy Yard, Portsmouth, N.H	30.04	763.0	78	25.6	71	21.7	85	W			1					0	0			Bright	
Naval Hospital, Yokohama, Japan	29.77	756.1	73	22.8	69	20.6	85	NW			1		0			0	0			Clear	
Adams, Flores Island, Uraguay	30.12†	765.0†	57	13 9	52	11.1	100	SW			4		2		SW	0	0			D. clouds	
Alert, N. 38° 50′, E. 141° 40′	29.86†	758.4†	70	21.1	70	21.1	90	W			4		1		W			Long	E	D. clouds	
Alliance, Constantinople, Turkey	30.00	762.0	75	23.9	76	24.4	52	SW			1-2		0							Clear	
Ashuelot, Che-foo, China	30.07	763.8	78	25.6	72	22.2	67	S			3		1					Smooth		D clouds	
Canonicus, New Orleans, La	29.95	760.7	56	13.3	80	26.7	91	E			2		10							Cloudy	
Colorado, New York, N. Y	29.98†	761.5†	71	21.7	70	21.1	95	Calm	0	0			10		S	0	0			Dense fog	
Despatch, Bosphorus	30.00	762.0	79	26.1	76	24.4	73	SW			2		2		Calm					Clear	
Essex, Madeira	30.05	763.3	77	25.0	79	26.1	91	NNE			1		4					Smooth	SW	D. clouds	
Franklin, Norfolk, Va	30.04	763.0	71	21.7	74	23.3	100	S	3.4	1.5			3		S	0	0			Clear	
Frolic, Pernambuco, Brazil	30.17	766.3	84	28.9	87	30.6	96	SE			1		2k		Calm	Blank	Blank	Ground	N&E	D. clouds	
Gettysburg, Naples, Italy	29.79‡	756.7‡			78	25.6	??	SSW			2		9							Showery	
Kearsarge, N. 21° 32′, E. 113° 35′	30.14	765.5			83	28.3	91	SSE			2		8		S&E	0	0	Smooth		D. clouds	
Lackawana, Port Townsend, W. T.	30.34	770.6			57	13.9	47	Calm			0		9					Smooth		D. clouds	
Marion, Smyrna, Turkey	30.00	762.0	79	26.1	80	26.7	70	WNW			2		2		Calm	0	0	Smooth		D. clouds	
Monocacy, Yokohama, Japan	29.76	755 9	72	22.2	71	21.7	66	WNW			2		0			0	0	Smooth		Blue sky	
New Hampshire, Port Royal, S. C	30.21	767.3			79	26.1	91	NE	5	2.2			3		ESE	0	0			D. clouds	
Omaha, Coquimbo, Chili	30.03	762.7	62.5	16.9	58.5	14.7	91	SSE	1	0.4			3		S	0	0	Smooth		Misty	
Onward, Callao, Peru	30.08	764.0	68	20.0	66	18.9	89	Var.			1		10					Long	W	D. clouds	
Ossipee, New York, N. Y	30.04	763.0	72	22.2	72	22.2	95	Calm			0		10		Calm					Foggy	
Palos, Wanchow, China	30.10	764.5	70	21.1	67	19.4	89	Calm			0		10		Calm					Rainy	
Pensacola, Mare Island, Cal	30.00	762.0			65	18.3	84	Calm			0		1		Calm	0	0			Clear	
Plymouth, New York, N. Y	30.28	769.1	80	26.7	72	22.2	90	Calm			0		0							Foggy	
Ranger, Nagasaki, Japan	30.00	762.0			72	22.2	76	Calm			0		2		W			Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.68	753.9			78	25.6	82	NW			3		8		W					D. clouds	
Santee, Annapolis, Md	30.08	764.0	76	24.4	75	23.9	90	SE			3		5		SE	0	0			Cloudy	
St. Louis, League Island, Pa	29.94	760.5	77	25.0	68	20.0	95	Calm	0	0			0?			0	0			Cloudy	
Tennessee, Yokohama, Japan	29.81	757.2	76	24.4	71	21.7	71	NNW	5	2.2			0			0	0	Smooth		Blue sky	
Trenton, Marseilles, France	29.92†	760.0†	72	22.2	68	20.0	70	NNW	10	4.5			2		N&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.86	758.4	80	26.7	84	28.9	57	NW			2		2		NW					D. clouds	
Wabash, Boston, Mass	30.05	763.3	72	22.2	72	22.2	85	SW	6	2.7			9		Calm	0	0			D. clouds	
Wyoming, Washington, D. C	29.97†	761.2†	76	24.4	75	23.9		S&W			1		10							Drizzling	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 41° 59′, W. 143° 38′			30.48*	774.2*	66	18.9	94	SSW			3		2		W	Small	WNW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong Kong, China.					83	28.3		NE			2		4		NE			Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 49° 36′, W. 17° 54′			30.26	768.6	62.0	16.7	72	SE			5		k		SE	Long	SE	Light cloudy	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (*Miscellaneous.*)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.96	761.0	80	26.7	82	Calm	0	0		1k	0					Clear	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 18, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.89	759.1	79.7	26.5	76	E			1		3			0.449	11.4	Fair	Michel.
Algiers			29.80	757.0	80.2	26.8	75	N			2		6			0	0	Fair	Peter.
La Calle			29.83	757.7	77.7	25.4	79	ENE			4		7			0	0	Cloudy	Fleury.
Tunis			29.87	758.6	86.0	30.0		SW			5		7			0.276	7.0	Cloudy	Jacques.
Sfax			29.91	759.7	84.2	29.0		ESE			2		2			0	0	Clear	Husson.
Saida					76.1	24.5		ENE			2		6			0.059	1.5	Fair	Millot.
Tebessa			29.91	759.6	77.4	25.2		W			2		5			0.157	4.0	Fair	Bourgeois.
Geriville			29.87	758.7	78.8	26.0	35	S			3		6			Inap.	Inap.	Fair	Lemaillot.
Laghouat			29.91	759.7	79.7	26.5	40	W			2		6			0.039	1.0	Fair	François.
Biskra			29.88	759.0	88.7	31.5	41	NW			1		8			Inap.	Inap.	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.47	748.6	30.02	762.5	58.8	14.9	62	NE			2		3			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.24	742.6	30.02	762.4	46.0	7.8	81	NW					10			0.047	1.2		Dr. Wierzbiski.
Eperies	29.01	736.9	29.89	759.3	50.0	10.0	57	N			3		10s		S	0.033	0.85		Julius Mikolik.
Gratz	28.78	731.0	30.03	762.7	55.6	13.1	52	NW			5		0			0.059	1.5		Andreas Rospini.
Hermannstadt	28.39	721.0	29.78	756.4	59.0	15.0	48	WNW			4		3			0.541	13.75		Prof. Reissenberger.
Kremsmünster	28.78	730.9	30.14	765.5	47.8	8.8	68	WNW			3		10			0.394	10.0		Prof. C. Wagner.
Lemberg	28.82	732.1	29.82	757.5	44.6	7.0	81	NW			3		10			0.118	3.0		Dr. T. Stanecki.
Pola	29.83	757.7	29.94	760.5	68.5	20.3	52	E			1		5ks			0.052	1.31		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.03	752.5	29.91	759.6	56.5	13.6	62	NW			3		6			0	0		Karl Stancel.
Trieste	29.87	758.7	29.97	761.3	65.1	18.4	60	W			1		1			0	0		P. Busin.
Vienna	29.38	746.2	30.08	764.1	50.5	10.3	83	NNW			2		8			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.69	728.8	30.21	767.4	52.5	11.4	54	N			2		5			0.008	0.2		
Brussels	30.04	762.9	30.24	768.0	54.9	12.7	55	ENE			2	1		NE		0.085	2.15		Royal Observatory.
Furnes																			
Maeseyck	30.11	764.7	30.24	768.0	55.6	13.1	64	NE			0		5			0.075	1.9		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.20	767.1	30.30	769.6	59.1	15.1		WNW	30	13.4			6			0	0	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	30.36	771.1	30.38	771.6	57	13.9		NW			2		8					Overcast	William McNeil.
Armagh, Observatory			30.47	773.9	58.4	14.7		NNE	5	2.2			4					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.37	771.4	57.7	14.3		WNW	15	6.7			7					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.43	772.9	61.5	16.4		NNW			1		1					Blue sky	J. Dreyer.
Bradford, Yorkshire	29.91	759.7	30.31	769.9	59.8	15.4		NW			3		5			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)			29.91	759.7	82.0	27.8		NE			3		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.30	769.6	59.0	15.0		N			1		7			Blank	Blank	D. clouds	H. Todd. [H.O
Cardington			30.32	770.1	59.0	15.0		N			1		5					D. clouds	John McLaren.
Chatham, School M. E	30.16	766.1	30.29	769.4	58.2	14.6		N			2		8					Fine	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.88	733.5	30.37	771.4	54.4	12.4		N			3		4					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.37	771.4	30.40	772.1	58	14.4		N			2		0					Blue sky	J. Mac Gowan.
Dover	30.23	767.8	30.26	768.6	59	15.0		NNE			3		5					¾ clouded	J. Costello.
Eccles, (near Manchester)			30.32	770.1	61.0	16.1		WNW	3.0	1.3			3					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.14	765.5	30.37	771.4	59.3	15.2		E			1		5					D. clouds	The Staff.
Fort Napier, (Natal)	27.83	706.9	30.05	763.3	64.9	18.3		S			4		6					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.98	761.5	85.5	29.7		W			0		3					D. clouds	
Galway, Queen's College			30.41	772.4	64	17.8		NW			1		1					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.80	756.9	29.83	757.7	79.6	26.4		E			2		3					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.16	766.1	30.37	771.4	60.1	15.6		WSW			2		9					Gloomy	D. G. Maclean.
Great Yarmouth	30.25	768.3	30.26	768.6	57	13.9		NNW			3		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.13	765.3	30.30	769.6	58.2	14.6		NNE			2		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.07	763.8	30.28	769.1	59	15.0		NE			3		5					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.37	771.4	63	17.2		E			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	30.33	770.4	30.38	771.6	56	13.3		N			4		2					Blue sky	John Tilston.
Jersey	30.01	762.2	30.30	769.6	59.8	15.4		NE			3		8					D. clouds	J. Fisher.
Kew, Observatory			30.32	770.1	55.6	13.1		NNE	11	4.9			7k					D. clouds	The Staff.
Kingstown	30.40	772.1	30.43	772 9	59	15.0		NNW			3		3					Blue sky	George Mitchell.
Leicester, Museum			30.33	770.4	58.2	14.6		N			1		5					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.77	756.1	29.84	757.9	80.8	27.1		SE			1		4					D. clouds	Corp'l. P. Bravis, A. H. C.
Nairn	30.27	768.8	30.36	771.1	58	14.4		NW			3		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			29.89	759.2	83.2	28.8		NE			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.14	765.5	30.33	770.4	62.3	16.8		NW			1		5cs		NW	0.022	0.56	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.81	757.2	30.33	770.4	58.0	14.4		NW			2-3		3					Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.33	770.4	56	13.3		N			1		3					Blue sky	F. Lucas
Plymouth	30.27	768.8	30.35	770.9	61.4	16.3		NE			2		7					D. clouds	John Merrifield.
Roche's Point	30.39	771.9	30.42	742.7															W. Kennedy.
Saint Ann's Head	30.22	767.6	30.38	771.6	60	15.6		NNE			2		2						John C. Walker.
Sandwick Manse, (Orkneys)			30.34	770.6	52.3	11.3		NW	20	8.9			10					Drizzling	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.74	755.4	80.2	26.8		SW			1		4			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	30.08	764.0	30.32	770.1	60.9	16.1		N			2		8			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.31	769.9	30.34	770.6	62.7	17.1	74	SE			1		6			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					59.2	15.1		W			1		5					D. clouds	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			30.40	772.1	55	12.8		NW			3		10					Drizzling	John Smith.
Stratfield Turgiss	30.12	765.0	30.34	770.6	59.0	15.0		N			1		8					D. clouds	Rev. C. H. Griffith, F. M. S
Thurso			30.33	770.4	54	12.2		NW			5		10					Gloomy	John Trotter.
Truro, Royal Institution			30.34	770.6	65	18.3		NE			4		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.44	773.2	59.7	15.4		N	9	4.0			3					Hazy	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		W			3		0						Henry Mercer.
Cape Good Hope, Obs'y	30.41	772.4	30.45	773.4	63.0	17.2	64	S	34	15.2		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.91	759.7	52.0	11.1	82	Calm			0		7k			0	0		Francis Abbott, F. R. A. S.
Leith, Restalrig Park			30.35	770.9	61.0	16.1		W			2	8ck		NE		0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.95	760.7	30.14	765.5	74.3	23.5	61	E	17.4	7.8		0	2		ESE	0.02	0.5	Bright	C. Meldrum.
Melbourne, Observatory	29.87	758.7	29.96	761.0	59.1	15.1	76	NNE	10	4.5			10		NW	0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.45	773.4	56	13.3		NNW			4		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.22	767.6	49	9.4		NW			4		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria				Capt. W. Watson.
S. S. Batavia, N. 51° 21′, W. 10° 40′	2	E	Blue sky	Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine, N. 39° 21′, W. 74° 0′	3		D. clouds	Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine, N. 49° 50′, W. 43° 0′	5	NNE	D. clouds	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller				Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.18	665.0			69.4	20.8	89	SW			1		4cks			0.1	3.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.91	759.7	29.96	760.9	52.7	11.5	74	W			2		10						
Fanöe	29.99	761.7	30.01	762.2	55.6	13.1	80	W			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.33	770.4	30.37	771.5	55.2	12.9	98	Calm			0		10					Raining	
Thorshavn, (Faröe)	30.34	770.6	30.37	771.5	52.2	11.2	83	N			2		0						
Vestervig	29.70	754.3	29.87	758.6	53.2	11.8	91	WNW			4		7						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.72	754.9	30.27	768.9	64.4	18	48	NE			4		2		W	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.88	759.0	29.96	761.0	65.3	18.5	50	N			6		8		W	0	0	Very cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.60	751.3	30.17	766.2	57.0	13.9	51	ENE			3		8		NE	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.95	760.8	30.24	768.1	57.7	14.3	47	ENE			3		5		ENE	0	0	Cloudy	Normal School.
Besançon	29.24	742.8	30.15	765.7	57.0	13.9	66	ENE			8		2		NE	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.22	742.1	30.15	765.7	62.1	16.7	90	N			6		5n		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.59	751.5	30.14	765.5	58.1	14.5	78	NE			4		8		NE	0	0	Very cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.99	761.7	30.21	767.2	60.3	15.7	73	NE			4		8ks		NE	0	0		The Staff.
Carcassonne, Normal School	29.64	752.8	30.05	763.2	70.5	21.4	54	W			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School														N					Dumoulié, Director.
Châlons sur-Marne, N. Sch'l	29.88	758.9	30.20	767.0	61.3	16.3	56	NE			2	5c				0.020	0.5	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.72	729.6	30.08	764.0	56.5	13.6	73	NE			1		8			0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.31	744.5	30.20	767.0	55.8	13.2	64	E			4		2		E	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.83	732.2	29.97	761.2	68.0	20.0	57	SW			4		8		SE			Light rain	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.93	760.1	30.14	765.5	62.4	16.9	49	N			4		8		N	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.92	760.0	30.23	767.8	58.5	14.7	50	E			4		5		E	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.15	740.3	30.07	763.6	59.9	15.5	54	NE			6		2		NW	0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	30.14	765.5	30.24	768.0	65.5	18.6	39	NNE			4		5		E	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.36	745.8	30.04	763.1	61.0	16.1	65	NNE			4		5			0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.24	742.8	30.24	768.2	57.6	14.2	52	•N			4		2		N	0.567	14.4	Slightly cl'dy	Normal School.
Nismes, Normal School	29.76	755.9	29.95	760.7	88.9	31.6	41	N			6		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.97	761.3	30.21	767.4	57.0	13.9	49	NE			2		8		NE	0.010	0.26	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.09	764.3	30.12	765.1	66.2	19.0	51	NE			4		5		E	6	0	½ covered	Lt. Decante, Director.
Rouen, Normal School	30.17	766.2	30.25	768.4	63.3	17.4	41	NE			3		2		NE	0	0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	28.98	736.2	30.05	763.2	64.4	18	53	W			2		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.1	29.80	756.8	82.4	28										0.12	3.		L'Abbé Marchési.
Marseilles, Observatory			29.90	759.5	69.6	20.9	70	SW			1		10			0.083	2.10	Heavy rain	The Staff.
Mont-Louis	24.83	630.7	30.15	765.7	54.1	12.3	44	SE	14.9	6.66			4		SW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.93	760.3	30.21	767.3	57.2	14.0	55	ENE			3		5		NE	0.016	0.4		Marié Davy, Director.
Perpignan			29.96	760.9	68.0	20.0	34	NE	11.2	5.00			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.22	539.0			47.5	8.6		NE			3		5					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.50	571.5			42.8	6.0		NE			3		5			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.05	763.2	30.21	767.4	59.0	15.0	57	NNE			3		6	N	NE	0	0		E. Renou.
Toulouse, Observatory	29.93	745.0	30.06	763.4	62.6	17.0	41	N			2		1			0	0		The Staff.
Tours	29.97?	761.3?	30.13?	765.3?	61.5	16.4	46	NE			3		6		E	0	0		C. Marquet.
Versailles, (near Paris)			30.22	767.5	59.4	15.2	50	NE			4		6			0.009	0.23	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.06	763.4	30.08	764.0	68.2	20.1	99	Calm	0	0			10n			0.028	0.7	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.95	760.7	30.12	765.0	56.1	13.4	50	N			2		10			0	0		Prof. Arndt.
Breslau	29.56	750.8	30.09	764.3	50.7	10.4	56	NW			2		10			0.207	5.26		Royal University Obs'y.
Carlsruhe	29.76	755.8	30.19	766.8	54.3	12.4	52	NE			2		5			0	0		Albert Senz.
Cassel	29.66	753.3	30.27	768.8	54.0	12.2	45	N			1		5	N		0	0		Dr. H. Möhl.
Crefeld	30.05	763.2	30.21	767.3	57.2	14.0	48	NE			2		6k			0	0		Director Lose.
Emden	30.09	764.2	30.12	765.1	59.2	15.1	96	W			3		10			0	0		Prof. Prestel.
Frankfort on the Main	29.90	759.4	30.26	768.7	55.4	13.0	41	NNE			2		5			0.047	1.2		Physical Society.
Friedrichshafen	28.72	729.5	30.16	766.1	53.4	11.9	58	NE			6		7	E		0	0		M. Wilhelm.
Hamburg	30.06	763.5	30.13	765.3	55.6	13.1	69	W			4		5ck			0	0	Fair	Captain F. Hegemann.
Kiel	30.04	762.9	30.05	763.3	55.8	13.2	75	W			2		3			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.86	758.4	29.93	760.2	50.9	10.5	60	NW			1								Prof. E. Luther.
Köslin			30.06	763.5	50.9	10.5		NW			4		3			0.303	7.7		H. Müller.
Leipsic, Observatory	29.78	756.3	30.20	767.1	53.8	12.1	55	NW			2		7	N		0.217	5.5		Prof. Bruhns.
Memel, Naval School	29.90	759.5	29.95	760.7	50.2	10.1	62	W			3		2k						Reinbrecht von Skalweit.
Neufahrwasser	29.98	761.6	30.00	762.0	51.6	10.9	63	N			1		8			0.224	5.7		A. Lothes.
Posen	29.80	756.9	30.09	764.3	48.6	9.2	82	NNW			2		6						Dr. Magener.
Strassburg Obs., (in Alsace)	29.64	752.8	30.19	766.8	54.7	12.6	50	NE			3		3	NE		0.022	0.55		Dr. Schur.
Stuttgart	29.22	742.2	30.17	766.4	52.2	11.2	50	NE			1		5	E		0	0		Prof. Schoder.
Treves, (Trier)	29.55	750.6	30.08	763.9	57.2	14.0	46	N			3		1			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.67	728.1	30.19	766.9	49.3	9.6	49	NNE			1		8	N		0.059	1.5		Dr. Von Bebber.
Wustrow, Naval School	30.12	765.0	30.15	765.8	53.8	12.1	65	NNW			2		4						E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Königsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.47	748.6	29.85	758.2	80.2	26.8		SW										½ cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.79	756.6	29.84	757.9	84.1	28.9	69	SW	21.0?	9.4?			3		SW	0	0	D. clouds	
Deesa																			
Bombay	29.83	757.8	29.87	758.7	84.0	28.9	73	NW	18.0	8.0			9	SW		0	0	Misty.	
Poona	27.81	706.4	29.81	757.1	79.4	26.3	74	N					8	E&NW	E	0.27	6.9	Thunder-storm.	
Lahore	28.97	731.9	29.69	754.2	95.2	35.1	33	W	2.4	1.1			0			0	0	Blue sky	
Belgaum	27.36	694.9	29.90	759.6	74.8	23.8	92	W	8.0	3.6			7		E&W	0.21	5.3	D. clouds	
Bangalore																			
Roorkee	28.82	731.9	29.69	754.0	94.8	34.9	30	NW	4.0	1.8			1			0	0	Strong wind	
Agra	29.16	740.8	29.71	754.6	98.7	37.1	28	NW					8		NW	0	0		
Trichinopoly																			
Nagpur	28.80	731.5	29.83	757.7	87.5	30.8	61	Calm	2.0	0.9			4			0	0	D. clouds	
Madras																			
Lucknow	29.35	745.6	29.71	754.7	96.1	35.6	31	WNW	4.2	1.9						0	0	Blue sky	
Allahabad	29.42	747.4	29.73	755.1	90.1	32.3	53	Calm	3.6	1.6			1			0	0	D. clouds	
Patna	29.54	750.4	29.72	754.9	89.2	31.8	63	E	0.4	0.2			4			0	0	D. clouds	
Hazaribagh	27.79	705.9	29.79	756.6	82.0	27.8	75	WNW	8.2	3.7			4			0	0		
Cuttack	29.73	755.1	29.81	757.2	85.0	29.4	67	NNE	3.3	1.5			6			0	0	D. clouds	
Calcutta (Alipore)	29.77	756.2	29.79	756.8	84.2	29.0	79	SSW	7.0	3.1			10		SW	0	0	Overcast	
Goalpara	29.38	746.4	29.77	756.2	81.5	27.5	83	SW	2.2	1.0			9			0.02	0.5	D. clouds	
Chittagong	29.76	756.0	29.86	758.3	80.9	27.2	91	SSW	4.2	1.9			10			0	0		
Sibsagar	29.48	748.7	29.81	757.2	82.0	27.8	88	E	2.2	1.0			10	E	E	0.70	17.8	D. clouds	
Rangoon																			
Jubbulpore	28.48	723.4	29.84	757.8	84.0	28.9	68	SW	2.9	1.3			2	SW		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,980 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.17	563.2	29.86	758.4	41.0	5.5	80	E			1		0	NE		0	0		Ab. Dom. Morgini.
Stelvio	22.14	562.3	29.87	758.6	37.0	2.8		NNE			1		5	SSE		0	0		Signora Ernesta Manfredi.
Udine	29.54	750.3	29.94	760.5	64.9	18.3	51	W	2.5	1.1			4			0.016	0.4		Prof. Giovanni Clodig.
Padua	29.82	757.4	29.93	760.1	66.7	19.3	52	SW	1.8	0.8			3			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.74	755.3	29.92	760.0	66.2	19.0	52	E	3.8	1.7			2	W		0	0		Conte Alm. Da Schio.
Verona	29.72	754.8	29.93	760.2	71.6	22.0	59	NW	3.8	1.7			6	NW		0	0		Dott. B. Bertoncelli.
Bergamo	28.61	726.8	29.89	759.2	66.9	19.4	56	S			1		3			0	0		Prof. Trionfini Carlo.
Domodossola	28.86	733.1	29.85	758.2	69.8	21.0	31	S			6		1			0	0		Prof. Giuseppe Calza.
Milan	29.41	747.1	29.91	759.7	72.0	22.2	45	E			2		6	E		0	0		Ab. Gio. Capelli.
Pavia	29.59	751.5	29.92	760.0	68.0	20.0	34	NE			2		1			0	0		Prof. Gio. Cantoni.
Moncalieri	29.03	737.4	29.91	759.6	70.2	21.2	40	SSE	0.7	0.3			1			0	0		Prof. P. F. Denza.
Mondovi	28.04	712.2	29.87	758.8	66.0	18.9	38	NW			2		7	W		0.004	0.1		Prof. D. C. Bruno.
Porto Maurizio	29.66	753.4	29.88	758.9	71.1	21.7	40	E			8		6	W		0	0		Prof. L. Vassallo.
Genoa	29.73	755.1	29.91	759.7	73.4	23.0	35	NW	3.1	1.4			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.68	753.9	29.93	760.2	68.9	20.5	41	E	3.1	1.4			2	SE		0	0		Dott. G. Manzi.
Parma	29.62	752.4	29.93	760.3	68.0	20.0	47	ESE			6		1			0	0		Prof. P. Pigorini.
Florence	29.66	753.4	29.91	759.6	73.2	22.9	33	SW			2		1			0.217	5.5		Cav. F. Meucci.
Leghorn	29.78	756.3	29.86	758.4	74.1	23.4	29	W	8.1	3.6			4			0	0		Prof. P. Monte.
Siena	28.71	729.2	29.87	758.6	69.8	21.0	30	E	3.1	1.4			3	W		0	0		Prof. L. Toscani.
Urbino	28.42	721.8	29.94	760.4	61.0	16.1	54	E			2		4			0.583	14.8		Prof. P. Serpieri.
Pesaro	29.92	759.9	29.97	761.1	66.0	18.9	64	NE	0	0			2			0.315	8.0		Prof. Luigi Guidi.
Ancona	29.87	758.8	29.98	761.4	68.7	20.4	51	N			4		0			0.827	21.0		Prof. F. DeBosis.
Grosseto	29.77	756.1	29.87	758.8	78.4	25.8	19	NE			2		6	NE		0	0		Avv. P. Ponticelli.
Rome	29.67	753.7	29.84	758.0	76.8	24.9	46	S	5.6	2.5			7			0.012	0.3		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.69	754.1	29.88	759.0	80.2	26.8	44	SSW			2		5	SW		0.626	15.9		Prof. L. Palmieri.
Lecce	29.65	753.0	29.89	759.2	76.6	24.8	56	NE	4.3	1.9			8			0	0		Prof. C. DeGiorgi.
Cosenza	29.04	737.5	29.89	759.1	75.2	24.0	74	SSW	3.1	1.4			9			0.315	8.0		Prof. F. D. Conti.
Cagliari	29.57	751.0	29.79	756.6	79.9	26.6	45	SW			2		9	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.75	755.7	29.80	756.9	79.5	26.4	74	N			2		10	S		0	0		Prof. F. Cafiero.
Palermo	29.58	751.4	29.83	757.6	70.7	21.5	93	WSW	12.5	5.6			10			2.508	63.7		Prof. G. Cacciatore.
Caltanissetta	27.95	709.9	29.81	757.1	77.4	25.2	57	WSW			4		5			0.020	0.5		Prof. A. Pagani.
Syracuse	29.74	755.5	29.82	757.4	83.3	28.5	59	SSW			6		6	WNW		0.138	3.5		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.36	745.7	29.91	759.8	75.2	24.0	48	SW	1.3	0.6			6	SW		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokiyo, Japan.

Tokiyo (Yeddo)																			The Observatory.
Tokiyo (Yeddo) University.	30.04	763.0	30.12	765.0	70	21.1	85	NE	1	0.4		9ck		W		0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico.

Mexico, Central Obs'y	23.12	587.1	30.15	765.9	55.4	13.0	77	NW	0.2	0.10		0	2k			0	0	Clear.	Mariano Bárcena
																			Vicente Reyes.
																			Miguel Perez. (Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.26	768.7	30.26	768.7	59.4	15.2		W			2					0.024	0.6		
Groningen	30.11	764.9	30.17	766.3	55.2	12.9		W			2					0	0		
Helder	30.20	767.0	30.20	767.0	56.1	13.4		NW			1					0.079	2.0		
Utrecht	30.19	766.7	30.23	767.9	58.8	14.9	66	NE			1		8			0.012	0.3	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Bergen	29.92	760.0	29.98	761.4	52.2	11.2	88	NNW	34.9	15.6			0			0.039	1.0		
Brönö	29.75	755.6	29.79	756.6	43.5	6.4	76	NNW	27	12			8			0	0		
Christiania	29.62	752.4	29.77	756.1	53.8	12.1	73	N	0	0			10			0	0		
Tromsö	29.47	748.4	29.51	749.5	42.8	6.0	79	Calm	0	0			10			0	0	Foggy	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.72	754.8	29.91	759.6	68.0	20.0	76	W	3.8	1.7			3			0.709	18.0		Dr. J. A. Sampaio
Campo Major	28.85	732.8	29.82	757.5	84.4	29.1	25	N	6.3	2.8			2			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.93	760.3	30.02	762.5	75.2	24.0	60	SW	9.4	4.2			5			0	0		Capt. D. A. de Cuhan.
Lisbon, Observatory	29.51	749.5	29.85	758.2	82.2	27.9	31	ENE	11.2	5.0			0			0	0		The Staff.
Ponta Delgada, (Azores)	29.87	758.7	29.64	760.5	75.6	24.2	60	W	3.8	1.7			7			0.299	7.6		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India Ponta Delgada.			29.97	761.3	73.6	23.1	65	WSW			2		9		WNW	6	SW	D. clouds.	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.55	750.6	29.98	761.4	48.2	9.0	56	NNW	7	3			10						Astronomical Obs.
Wilna	29.50	749.4	29.93	760.1	47.7	8.7	61	NE	2	1			10						Astronomical Obs.
Dorpat	29.59	751.5	29.83	757.7	50.0	10.0	66	SW	9	4			8						Physical Cabinet.
St. Petersburg	29.75	755.7	29.77	756.1	49.3	9.6	57	W	11	5			7						Central Physical Obs.
Kuopio	29.21	741.9	29.52	749.9	47.5	8.6	84	SW	18	8			10						Ch. Forsten.
Kieff	28.94	735.1	29.58	751.4	42.6	5.9	100	NE	9	4			10						Physical Cabinet.
Nikolaiev	29.52	749.9	29.60	751.7	67.6	19.8	82	S	22	10			10					Thunder-storm.	Kurdakof.
Kertch	29.75	755.7	29.77	756.2	73.4	23.0	90	SE	9	4			6						Lagorio.
Moscow	29.32	744.7	29.87	758.7	47.1	8.4	65	SSW	4	2			5						Meteorological Obs.
Lugan	29.53	750.0	29.73	755.1	70.9	21.6	52	S	9	4			4						Meteorological Obs.
Archangel	29.53	750.1	29.55	750.6	41.5	5.3	80	W	18	8			9						Ogorodnikof.
Tiflis	28.47	723.1	29.80	756.9	86.9	30.5	23	Calm	0	0			6						Physical Observatory.
Astrakhan	29.99	761.8	29.91	759.7	77.5	25.3	65	SSW	9	4			3						Sebastianof.
Kasan	29.44	747.8	29.71	754.7	46.2	9.0	57	WNW	7	3			9						Physical Cabinet.
Orenburg	29.35	745.5	29.72	755.0	45.3	7.4	77	SW	9	4			10						Tschernischet.
Ekaterinburg	28.58	725.8	29.50	749.3	52.3	11.3	93	SSE	18	8			10						Meteorological Obs.
Nukuss	29.79	756.6	30.01	762.3	77.2	25.1	44	WNW	2	1			0						
Kasaly																			Bobrof.
Tashkend	28.56	725.4	30.23	767.9	68.0	20.0	72	Calm	0	0			0						Michelson.
Barnaul	29.65	753.1	30.17	766.4	52.3	11.3	60	Calm	0	0			9						Meteorological Obs.
Yeniseisk	29.89	759.2	30.04	762.9	53.8	12.1	86	W	2	1			3						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.76	756.0	29.91	759.6	73.4	23.0	64	Calm	0	0			1						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					46.8	8.2	93	Calm	0	0			4						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.66	702.6			77.4	25.4	26	NE	7.4	3.33		1	2	W		0	0	Clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.82	757.4	29.90	759.4	79.3	26.3	87	Calm	0	0		0	0			0	0	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.76	755.8	29.85	758.2	80.6	27.0	64	S	22.0	9.8		0	1		SSW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.84	757.9	84.9	29.4	78	S	2.0	0.90		5s	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Haparanda	29.41	747.1	29.45	748.1	42.4	5.8	85	SE			2		10					Raining	
Umea	29.40	746.8	28.47	748.4	44.2	6.8	66	N			6		9			0	0		
Hernosand	29.47	748.5	29.52	749.8	47.1	8.4	57	NNW			6		5			0	0		
Stockholm	29.50	749.4	29.68	753.9	48.6	9.2	84	WSW			4		10			0.012	0.3	Raining	
Wisby	29.79	756.7	29.85	758.2	50.0	10.0	64	W			6		5			0.035	0.9		
Sub-Series.																			
Upsala	29.57	751.1	29.65	753.0	46.8	8.2	93	SW	10.1	4.5			10		WSW	0.166	4.22	Raining	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.63	727.3	30.05	763.3	57.0	13.9	61	NE			2		5			0	0	Cloudy	The Observatory.
Zurich	28.47	723.0	30.11	764.7	52.5	11.4	66	NE			1		7		NE	0	0	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +0.3 mm; Thermometer, —3.9 cent.; Relative Humidity, — 2 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.78	756.5	81.5	27.5	47	SSW	0	0			6		NW	0.780	19.8		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.82	757.4	83.1	28.4		SW			1		8						B. Stefanidès.
Valona			30.02	762.5	74.3	23.5		NW			2		5			0	0	Cloudy	A. Bertrand.
Varna			29.65	753.0	82.4	28.0		NW			2		10					Thunder-storm	Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.95	760.8	83.5	28.6	62	NW			2		1k			0	0	D. clouds	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B	29.52	749.8	29.59	751.6	67.4	19.7	92	SW	18	8.0			10			0.29	7.4		Hon. J. Ferguson.
Brockville, Ontario			29.98	761.5	57	13.9		W	8	3.6		0	0			1.01	25.7	Clear	W. R. Bigg.
*Chatham, N. B			29.65	753.1	67	19.4	96	S	13	5.8			10s		S	0.09	2.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.80	756.9	66	18.9	93	SW	18	8.0			8s		S	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.90	759.4	51.3	10.7	91	NW			2	2k	0			0.400	11.43	Clearing	James Smith, M. A.
Dalhousie, N. B	29.62	752.3	29.66	753.4	57.4	14.1	93	S			1							Raining	H. A. Johnson.
Esquimault, B. C	29.96	761.0	30.00	762.0	52.3	11.3	100	SE					10			0	0	Dense fog	W. H. Bovis.
*Father Point, Quebec			29.71	754.6	50	10.0	89	SW	26	11.6			5s		SW	0.32	8.1	Cloudy	J. McWilliams.
Fredericton, N. B	29.64	752.8	29.70	754.4	65.2	18.4	93	SW	7	3.1			10n		SW	0.21	5.3	Raining	Prof. Harrison.
*Fort Garry, Manitoba			29.82	757.4	39	3.9	95	SW	3	1.3		2k	2ks	SW	SW	0	0	Fair	James Stewart.
Goderich, Ontario	29.25	742.9	30.03	762.7	56.5	13.6	75	NW			4	6k	0	NW		0	0	Clearing	H. J. Strang, M. A.
Granton, Ontario	28.94	735.1	30.04	763.0	48	8.9	78	SW			2	1c	0	E		0	0	Clear	James Grant.
*Halifax, N. S	29.69	754.1	29.82	757.4	69	20.6	92	SW	15	6.7			10n		SW	Inap.	Inap.	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.70	754 4	30.07	763.8	51.9	11.1	64	W			3	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.90	759.4	29.93	760.2	60	15.6	94	Calm			0	10n				0	0	Dense fog	E. Weedon.
*Kingston, Ontario	29.60	751.8	29.97	761.2	50	10.0	79	NW	8	3.6		0	Sm'c		NW	0.32	8.1	Clear	S. Woods, M. A.
*Montreal, Quebec	29.70	754.4	29.90	759.4	53	11.7	86	SW	6	2.7		0	2ks		NW	0.30	7.6	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.28	743.7	29.98	761.5	49	9.4	82	N	4	1.8		2cs	0	W		0.22	5.6	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.25	742.9	30.00	762.0	51.2	10.7	82	W			1	2k	0			0.10	2.5	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.36	745.7	30.06	763.5	50	10.0	58	W	10	4.5		0	0			0.04	1.0	Clear	H. Morgan.
Port Hastings, N. S	29.82	757.4	29.87	758.7	68.3	20.2		SW	3	1.3						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.42	747.3	30.07	763.8	51	10.6	77	W	16	7.2		2k	0	W		0.06	1.5	Clear	M. Payne.
*Quebec, Quebec	29.48	748.8	29.80	756.9	55	12.8	81	W	14	6.3		0	2n		W	0.02	0.5	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.50	749.3	29.95	760.7	48	8.9	89	NW	4	1.8		0	0			0.25	6.3	Clear	W. H. McIntyre.
St. John, N. B	29.59	751.6	29.75	755.6	59	15.0	100	SE	13	5.8			Fog			0.58	14.7		G. Murdock, C. E.
*Saugeen, Ontario	29.30	744.2	29.99	761.7	55	12.8	66	NW	12	5.4			8ks			0.18	4.6	Cloudy	K. Stewart.
Stayner, Ontario			30.03	762.7	49	9.4	78	SW	5	2.2		5k	0	W		0.04	1.0	Fair	R. J. Cole.
Stratford, Ontario	28.75	730.2	30.04	763.0	46.0	7.8	78	SW	7	3.1			2s			0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	29.86	758.4	29.89	759.2	68	20.0	88	SW	11	4.9			10ks		SW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.03	762.7	50	10.0	73	W	6	2.7			8ks		W	0.05	1.3	Cloudy	Magnetic Observatory.
Windsor, N S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland					62.0	16.7	88	SW				10k	10s			0	0	Cloudy	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford. 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.69	754.1	29.91	759.7	56	13.3	62	W	12	5.4		0	0			0.14	3.6	Clear	
Alpena, Michigan	29.35	745.5	30.01	762.2	45	7.2	68	W	3	1.3		0	5s		W	0	0	Fair	
Atlantic City, New Jersey	29.93	760.2	29.95	760.7	60	15.6	70	NW	13	5.8			10s		W	0.89	22.6	Cloudy	
Augusta, Georgia	29.78	756.4	29.96	761.0	73	22.8	90	N	1	0.4		8cs	0	Calm		0	0	Fair	
Baltimore, Maryland	30.00	762.0	30.05	763.3	62	16.7	61	NW	7	3.1		2c	2s	NW	NW	0.04	1.0	Fair	
Barnegat, New Jersey	29.92	760.0	29.94	760.5	61	16.1	66	NW	22	9.8		0	8s		NW	0.83	21.1	Clearing	
Bismarck, Dakota	28.16	715.3	29.86	758.4	38	3.3	71	W	2	0.9		0	1s;fg		W	0	0	Clear	
Boise City, Idaho	27.26	692.4	29.90	759.4	44	6.7	84	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.67	753.6	29.82	757.4	58	14.4	81	W	15	6.7			10s		W	0.31	7.9	Cloudy	
Brackettville, Texas	28.83	732.3	29.83	757.7	65	18.3	78	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.91	734.3	29.93	760.2	36	2.2	90	SW	5	2.2		1k	0	Calm		0	0	Clear	
Brownsville, Texas	29.87	758.7	29.94	760.5	73	22.8	76	N	8	3.6		2cs	0	Calm		0	0	Clear	
Buffalo, New York	29.32	744.7	30.02	762.5	54	12.2	67	W	8	3.6		2k	0	W		Inap.	Inap.	Fair	
Burlington, Vermont	29.76	755.9	30.02	762.5	59	15.0	58	NW	6	2.7		0	8s		N	0.74	18.8	Fair	
Cairo, Illinois	29.81	757.2	30.21	767.3	54	12.2	61	NE	11	4.9		5cs	0	Calm		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.79	680.4	30.27	768.8	60	15.6	55	Calm				0	0			0	0	Clear	
Campo, California	27.34	694.4	29.91	759.7	49	9.4	59	Calm	0	0		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.86	758.4	29.86	758.4	74	23.3	85	N	12	5.4		10k	0	NW		0.43	10.9	Cloudy	
Cape Henry, Virginia	29.93	760.2	29.96	761.0	68	20.0	84	N	30	13.4			10s		N	0.10	2.5	Cloudy	
Cape Lookout, N. Carolina	29.92	760.0	29.94	760.5	77	25.0	82	NW	18	8.0		5k	0	NE		0	0	Fair	
Cape May, New Jersey	29.96	761.0	29.99	761.7	62	16.7	66	NE	28	12.5		5c	0	NW		0.01	0.3	Fair	
Charleston, South Carolina	29.91	759.7	29.97	761.2	78	25.6	86	N	4	1.8		8c;cs	0	W; Calm		0	0	Cloudy	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	39	3.9	37	NW	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.42	747.3	30.10	764.5	49	9.4	57	W	6	2.7		0	Fog		W	0	0	Clear	
Cincinnati, Ohio	29.46	748.3	30.11	764.8	52	11.1	79	W	2	0.9		0	Fog		W	0	0	Foggy	
Cleveland, Ohio	29.39	746.5	30.11	764.8	51	10.6	59	S	9	4.0		10k	0	W		0	0	Cloudy	
Concho, Texas	28.27	718.0	29.96	761.0	57	13.9	57	NW	6	2.7		8cs		NW		0	0		
Corsicana, Texas	29.58	751.3	30.05	763.3	59	15.0	64	NE	12	5.4		0	0			0.03	0.8	Clear	
Davenport, Iowa	29.55	750.6	30.20	767.1	49	9.4	77	W	1	0.4		0	0			0	0	Clear	
Denison, Texas	29.34	745.2	30.15	765.8	56	13.3	68	N	6	2.7		0	0			0	0	Clear	
Denver, Colorado	24.90	632.4	30.12	765.0	40	4.4	56	S	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.40	746.7	30.07	763.8	47	8.3	69	W	7	3.1		0	Sm'e		Calm	0.01	0.3	Clear	
Dodge City, Kansas	27.55	699.8	29.87	758.7	48	8.9	77	S	3	1.3		2k	0	S		0	0	Clear	
Dubuque, Iowa	29.44	747.8	30.15	765.8	45	7.2	76	Calm	0	0		0	0			0	0	Clear	
Duluth, Minnesota	29.24	742.7	29.92	760.0	46	7.8	69	NW	7	3.1			10s		W	0	0	Cloudy	
Eagle Pass, Texas	29.28	743.7	30.00	762.0	68	20.0	74	NW	6	2.7		0	0			0	0	Clear	
Eastport, Maine	29.64	752.8	29.71	754.6	63	17.2	94	S	10	4.5			10n			0.44	11.2	Light rain	
Erie, Pennsylvania	29.33	745.0	30.04	763.0	58	14.4	37	NW	10	4.5		5k	0	W		0.05	1.3	Fair	
Escanaba, Michigan	29.35	745.5	30.01	762.2	43	6.1	67	W	8	3.6		0	0			0	0	Clear	
Florence, Arizona	28.29	718.6	29.89	759.2	82	27.8	35	Calm				5ck	0	Calm		0	0	Fair	
Fort Bayard, New Mexico	24.16	613.6	30.16	766.1	54	12.2	55	NW	4	1.8		0	0			0	0	Clear	
Fort Craig, New Mexico	25.66	651.8			53	11.7	73	E	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.64	752.8	30.19	766.8	50	10.0	78	Calm	0	0		0	0			0	0	Clear	
Fort Griffin, Texas	28.90	734.0	30.19	766.8	55	12.8	87	NW	2	0.9		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.97	735.8	30.09	764.3	52	11.1	72	N	4	1.8		0	1s		Calm	0	0	Clear	
Fort Sully, Dakota	28.28	718.3	29.98	761.5	38	3.3	71	NW	1	0.4		0	0			0	0	Clear	
Galveston, Texas	29.74	755.4	29.78	756.4	69	20.6	79	N	34	15.2			10s		N	2.43	61.7	Cloudy	
Grand Haven, Michigan	29.42	747.3	30.06	763.5	58	14.4	37	NW	18	8.0		1c	0	NW		0	0	Clear	
Indianapolis, Indiana	29.39	746.5	30.18	766.6	48	8.9	77	Calm	0	0		0	Sm'e			0	0	Clear	
Indianola, Texas	29.90	759.4	29.92	760.0	70	21.1	71	N	32	14.3		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.91	759.7	29.94	760.5	77	25.0	82	E	3	1.3		5c	0	W		0	0	Fair	
Keokuk, Iowa	29.56	750.8	30.18	766.6	57	13.9	62	NW	2	0.9		0	0			0	0	Clear	
Key West, Florida	29.84	757.9	29.87	758.7	82.5	28.1	81	SE	3	1.3		2cs	5ks	Calm	SE	0.08	2.0	Cloudy	
Kittyhawk, North Carolina	29.92	760.0	29.94	760.5	71	21.7	90	N	34	15.2			10ks		N	0	0	Cloudy	
Knoxville, Tennessee	29.06	738.1	30.06	763.5	59	15.0	87	N	8	3.6			10ks		NE	1.79	45.5	Cloudy	
La Crosse, Wisconsin	29.34	745.2	30.09	764.3	45	7.2	76	S	7	3.1		0	0			0	0	Clear	
La Mesilla, New Mexico	26.19	665.2	30.34	770.6	61	16.1	61	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					73	22.8	71	N	6	2.7		0	0			0	0	Clear	
Leavenworth, Kansas	29.33	745.0	30.18	766.6	47	8.3	85	N	1	0.4		0	Fog			0	0	Clear	
Los Angeles, California	29.55	750.6	29.88	758.9	65	18.3	90	N	2	0.9			Fog			0	0	Foggy	
Louisville, Kentucky	29.60	751.8	30.16	766.1	55	12.8	67	N	4	1.8		1c	Sm'e	SW	N	0	0	Fair	
Lynchburg, Virginia	29.38	746.2	30.04	763.0	68	20.0	60	NE	3	1.3		10k	0	N		1.31	33.3	Cloudy	
Maricopa Wells, Arizona					63	17.2	52	NE				5k	0	SW		0	0	Fair	
Marquette, Michigan	29.24	742.7	29.95	760.7	45	7.2	60	SW	10	4.5		0	0			0	0	Clear	
Mason, Texas	28.56	725.4	29.60	751.8	59	15.0	76	N	10	4.5						0	0	Clear	
Memphis, Tennessee	29.82	757.4	30.14	765.5	56	13.3	68	NE	6	2.7			10s		SW	0.42	10.7	Cloudy	
Milwaukee, Wisconsin	29.44	747.8	30.15	765.8	42	5.6	65	W	8	3.6		0	0			0	0	Clear	
Mobile, Alabama	29.78	756.4	29.83	757.7	72	22.2	97	N	20	8.9			10n		SE	1.12	28.4	Heavy rain	
Montgomery, Alabama	29.72	754.9	29.94	760.5	72	22.2	71	NE	8	3.6			10s		E	0	0	Cloudy	
Morgantown, West Virginia	29.08	738.6	30.12	765.0	56	13.3	76	Calm	0	0		0	Fog			0.67	17.0	Foggy	
Mt. Washington, N. H.	23.62	599.9	29.98	761.5	34	1.1	100	NW	35	15.6			Fog		NW	0.55	14.0	Foggy	
Nashville, Tennessee	29.61	752.1	30.14	765.5	56	13.3	62	N	7	3.1		10cs	0	S		1.10	27.9	Cloudy	
New Haven, Connecticut	29.77	756.1	29.88	758.9	61	16.1	60	N	12	5.4		5cs	Haze	SW		0.58	14.7	Fair	
New London, Connecticut	29.82	757.4	29.87	758.7	62	16.7	71	NW	8	3.6		2ck	5s	SW	Calm	0.20	5.1	Fair	
New Orleans, Louisiana	29.60	751.8	29.66	753.4	76	24.4	100	E	24	10.7			10n		SE	3.55	90.2	Heavy rain	
Newport, Rhode Island	29.77	756.1	29.82	757.4	63	17.2	83	NW	10	4.5			10ks		NW	0.31	7.9	Threatening	
New York, New York	29.78	756.4	29.95	760.7	60	15.6	66	NW	11	4.9		0	2ks		Calm	0.53	13.5	Fair	
Norfolk, Virginia	29.93	760.2	29.98	761.5	65	18.3	83	N	14	6.3			10s		N	0.56	14.2	Cloudy	
North Platte, Nebraska	27.14	689.3	29.72	754.9	46	7.8	60	W	6	2.7		0	0			0	0	Clear	
Olympia, Washington Ter.	29.98	761.5	30.02	762.5	48	8.9	92	S	1	0.4			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	29.02	737.1	30.10	764.5	50	10.0	64	S	5	2.2		2ck	0	NW		0	0	Clear	
Oswego, New York	29.68	753.9	29.99	761.7	59	15.0	50	NW	7	3.1		0	0			0.37	9.4	Clear	
Pembina, Dakota	29.03	737.3	29.87	758.7	38	3.3	85	SE	6	2.7		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.93	760.2	29.98	761.5	60	15.6	65	NW	24	10.7		5cs	0	W		0.20	5.1	Fair	
Phœnix, Arizona					73	22.8	34	E				8k	0	S		Inap.	Inap.	Cloudy	
Pike's Peak, Colorado	17.97	456.4	30.18	766.6	23	—5.0	60	NW	20	8.9		0	0			0	0	Clear	
Pioche, Nevada	24.17	613.9	29.94	760.5	53	11.7	42	S	2	0.9		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.10	764.5	49	9.4	85	NW	2	0.9		0	0			0.33	8.4	Clear	
Port Huron, Michigan	29.38	746.2	30.05	763.3	47	8.3	69	W	6	2.7		0	0			Inap.	Inap.	Clear	
Portland, Maine	29.73	755.1	29.78	756.4	57	13.9	87	N	14	6.3			10n		N	0.37	9.4	Light rain	
Portland, Oregon	30.00	762.0	30.10	764.5	51	10.6	93	SW	1	0.4			10s		Calm	0	0	Cloudy	
Prescott, Arizona					60	15.6	40	S				2k	0	S		0	0	Fair	
Punta Rassa, Florida	29.88	758.9	29.90	759.4	82	27.8	78	E	6	2.7		0	0			0	0	Clear	
Red Bluff, California	29.50	749.3	29.84	757.9	67	19.4	33	NW	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.38	746.2	29.99	761.7	54	12.2	73	W	6	2.7		0	0			0.33	8.4	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.50	749.3	30.07	763.8	45	7.2	92	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.75	755.6	29.83	757.7	63	17.2	46	N	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.64	752.8	30.22	767.6	54	12.2	74	Calm	0	0			Fog			0	0	Foggy	
St. Marks, Florida	29.88	758.9	29.90	759.4	75	23.9	92	E	1	0.4		5cs	0	Calm		Inap.	Inap.	Fair	
St. Paul, Minnesota	29.15	740.4	29.99	761.7	43	6.1	75	SW	1	0.4		5ck	0	W		0	0	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.78	654.8	30.11	764.8	51	10.6	45	SE	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.32	744.7	29.89	759.2	67	19.4	41	N	12	5.4		0	0			0	0	Clear	
San Diego, California	29.82	757.4	29.89	759.2	65	18.3	90	S	2	0.9			Fog			0	0	Foggy	
Sandusky, Ohio	29.44	747.8	30.12	765.0	49	9.4	71	SW	10	4.5		1k	0	Calm		0	0	Clear	
Sandy Hook, New Jersey	29.92	760.0	29.94	760.5	61	16.1	66	NW	20	8.9		10ck	0	W		0.52	13.2	Cloudy	
San Francisco, California	29.79	756.7	29.85	758.2	65	18.3	69	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.42	594.9	29.96	761.0	46	7.8	76	E	1	0.4		0	Haze			0	0	Dense haze	
Savannah, Georgia	29.86	758.4	29.95	760.7	78	25.6	82	Calm	0	0		8c	0	W		0	0	Fair	
Shreveport, Louisiana	29.79	756.7	30.01	762.2	62	16.7	61	N	16	7.2		10cs	0	N		0.07	1.8	Cloudy	
Smithville, North Carolina	29.92	760.0	29.95	760.7	74	23.3	90	NW	6	2.7		5cs	0	W		0	0	Fair	
Springfield, Massachusetts	29.69	754.1	29.82	757.4	59	15.0	64	NW	7	3.1		2c	0	W		0.70	17.8	Fair	
Stanwix, Arizona					69	20.6	56	NW				0	5ks		NW	0	0	Fair	
Stockton, Texas					57	13.9	93	N	4	1.8		0	8s		N	0.03	0.8	Fair	
Thatcher's Island, Mass	29.75	755.6	29.81	757.2	57	13.9	87	NW	24	10.7		2c	8s	NW	SW	0.39	9.9	Cloudy	
Toledo, Ohio	29.43	747.5	30.10	764.5	52	11.1	72	SW	4	1.8		0	Haze		Calm	0.03	0.8	Hazy	
Tucson, Arizona	27.51	698.7	30.06	763.5	72	22.2	45	S				0	5ks		SE	0	0	Fair	
Tybee Island, Georgia	29.91	759.7	29.94	760.5	78	25.6	86	N	4	1.8		10cs	0	W		0	0	Cloudy	
Umatilla, Oregon	29.70	754.4			44	6.7	60	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.74	755.4	29.99	761.7	58	14.4	100	NE	13	5.8			10n		NE	0.73	18.5	Light rain	
Virginia City, Montana	24.38	619.2	29.86	758.4	39	3.9	63	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.47	748.5	29.83	757.7	65	18.3	44	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C	29.94	760.5	30.06	763.5	61	16.1	90	NW	10	4.5		8cs	0	W		0.47	11.9	Cloudy	
Wickenburg, Arizona					60	15.6	16	SW				0	0			0	0	Clear	
Wilmington, N. Carolina	29.87	758.7	29.95	760.7	73	22.8	90	SW	6	2.7			10s		SW	0	0	Cloudy	
Winnemucca, Nevada	25.73	653.5	30.09	764.3	40	4.4	32	NE	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	29.78	756.4	29.83	757.7	62	16.7	83	NW	16	7.2			10s		NW	0.16	4.1	Cloudy	
Yankton, Dakota	28.74	730.0	30.06	763.5	39	3.9	81	N	3	1.3		5c	0	W		0	0	Fair	
Yuma, Arizona	29.62	752.3	29.78	756.4	66	18.9	23	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.49	749.0	29.54	750.3	37.0	2.8	95	NW	6	2.7		1c	0	NW		0.30	7.6	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.85	758.2	29.87	758.7	85	29.4	79	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	81	27.2	91	Calm	0	0		2c	2s	Calm		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.80	756.9	29.88	758.9	83.0	28.6		SE			1					0	0	Clear	F. M Everett.
St. Thomas, W. I.					83	28.3	87	E				2k	2s	E		0	0	Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.79	756.7	29.81	757.2	84	28.9	87	E				0	8ks		E				L. V. Bigard.
Bridgetown, Barbados, W. I	29.98	761.5	29.99	761.7	83	28.3	79	NE	4	1.8		10k	10ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.96	761.0	84	28.9	75	NE			3	3c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			67.2	19.6	87	Calm			0		10ns			0.17	4.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.04	763.0	30.06	763.5	74	23.3		NE			2					0.15	3.8		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,265 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.89	759.2	67	19.4	63	17.2	100	SW	4	1.8			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.00	762.0			82	27.8	87	NE	17	7.6			10		E	1.83	46.5			D. clouds	
Navy Yard, Portsmouth, N.H	29.87	758.7	70	21.1	58	14.4	82	WNW	10	4.5			9		NW	0.475	12.07			Cloudy	
Naval Hospital, Yokohama, Japan	30.06	763.5	74	23.3	72	22.2	83	Calm			0		8ck		W	0	0			Cloudy	
Adams, Montevideo, Uraguay	29.89	759.2	57	13.9	54	12.2	80	N			4		10		SW	0	0			D. clouds	
Alert, Kamaishi, Japan	30.21†	767.3†	69	20.6	69	20.6	90	NNW			3		5							D. clouds	
Alliance, Constantinople, Turkey.	29.90	759.4	74	23.3	78	25.6	57	SSW			2		3		N&W					Clear	
Ashuelot, Che-foo, China	30.12	765.0	78	25.6	73	22.8	72	SSE			2		0							Blue sky	
Canonicus, New Orleans, La	29.73	755.1	54	12.2	76	24.4	91	ESE			4		10		S&E					Cloudy	
Colorado, New York, N. Y.	30.05†	763.3†	66	18.9	63	17.2	62	NW	13	5.8			4		WSW	0.41	10.4			Fair	
Despatch, Varna, Turkey	29.88	758.9	74	23.3	71	21.7	62	W			5		9		WSW					Cloudy	
Essex, Madeira	30.02	762.5	74	23.3	78	25.6	86	SW			1		5		SW			Smooth	W	D. clouds	
Franklin, Norfolk, Va.	30.08	764.0	73	22.8	66	18.9	??	NNW	12	5.4			5		NNW	0.6	15.			Cloudy	
Frolic, Pernambuco, Brazil	30.11	764.8	80	26.7	84	28.9	79	E			4		2k		Calm	Light	Light	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.85‡	758.2‡			80	26.7	??	Calm			0		5			Blank	Blank			D. clouds	
Kearsarge, N. 18° 25′, E. 111° 20′	30.13	765.3			83	28.3	96	SE			3		1		S&E	0	0	Smooth		Lightning	
Lackawana, Port Townsend, W. T.	30.04	763.0			58	14.4	76	Calm			0		10					Smooth		D. clouds	
Marion, Smyrna, Turkey	29.91	759.7	79	26.1	80	26.7	70	S			2		4		Calm	0	0	Smooth		D. clouds	
Monocacy, Yokohama, Japan	30.10	764.5	75	23.9	74	23.3	76	Calm			0		10		NW	0	0	Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.14	765.5			80	26.7	82	NE	5	2.2			6		E	0	0			D. clouds	
Omaha, Coquimbo, Chili	30.08	764.0	63	17.2	60	15.6	88	SE	2	0.9			9		S&W	0	0	Smooth		Hazy	
Onward, Callao, Peru	30.05	763.3	70	21.1	67	19.4	89	SSE			1		4					Long	W	D. clouds	
Ossipee, New York, N. Y.	29.96	761.0	66	18.9	61	16.1	71	NNW			5		3		WSW					D. clouds	
Palos, Wanchow, China	30.10	764.5	75	23.9	72	22.2	95	Calm			0		10		Calm					Misty	
Pensacola, Mare Island, Cal.	29.96	761.0			67	19.4	84	S			0-1		0			0	0			Pleasant	
Plymouth, New York, N. Y.	30.23	767.8	65	18.3	61	16.1	66	N			3		1		N&W					Clear	
Ranger, Nagasaki, Japan	30.02	762.5			71	21.7	80	Calm			0		10		Calm			Smooth		Cloudy	
Rio Bravo, Brownsville, Texas	29.83	757.7			74	23.3	86	NW			3		6		E					D. clouds	
Santee, Annapolis, Md.	30.10	764.5	68	20.0	64	17.8	73	NW			4		3		W	0.13	3.3			Cloudy	
St. Louis, League Island, Pa	29.95	760.7	69	20.6	64	17.8	68	N	5	2.2			5		WNW	0.40	10.2			Fair	
Tennessee, Yokohama, Japan	30.05	763.3	77	25.0	75	23.9	72	ESE	1	0.4			8		S&E	0	0	Slight	S&E	D. clouds	
Trenton, Marseilles, France	30.00†	762.0†	72	22.2	70	21.1	100	Calm	0	0			8		Calm	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.88	758.9	82	27.8	82	27.8	56	S			2-4		2		S					Squally	
Wabash, Boston, Mass.	29.87	758.7	62	16.7	63	17.2	94	NW	10	4.5			7		NW	0.25	6.3			D. clouds	
Wyoming, Washington, D. C.	30.28†	769.1†	66	18.9	64	17.8		N			3		6		N					D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 43° 28′, W. 148° 11′			30.36*	771.1*	58	14.4	76	WNW			1		9		WNW	Small	W	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong Kong, China.					83	28.3		ESE			2		1		SE			Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 40° 10′, W. 24° 50′			29.83	757.7	60.0	15.6	91	ESE			8		Haze			Heavy	ESE	Haze & sm'e	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.90	759.4	79	26.1	86	SE	2	0.9		8ck	0					Cloudy	Capt. James Jorgenson.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 19, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIYO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.89	759.2	80.2	26.8	73	Calm			0		1			0	0	Clear	Michel.
Algiers			29.84	757.8	78.8	26.0	63	N			1		5			0.138	3.5	Fair	Peter.
La Calle			29.82	757.5	79.3	26.3	73	NW			3		8			0.079	2.0	Cloudy	Fleury.
Tunis			29.85	758.3	86.0	30.0		SW			3		7			0.236	6.0	Cloudy	Jacques.
Sfax			29.92	759.9	86.0	30.0		SE			2		8			0	0	Cloudy	Husson.
Saida			29.86	758.5	80.1	26.7		SSW			3		2			1.528	38.8	Clear	Millot.
Tebessa			29.89	759.3	71.6	22.0		SW			3		6			0.039	1.0	Fair	Bourgeois.
Geriville			29.87	758.7	80.8	27.1	21	NW			3		8			0.118	3.0	Cloudy	Lemaillot.
Laghouat			29.89	759.2	78.8	26.0	55	E			2		4			0.197	5.0	Fair	François.
Biskra			29.80	759.3	88.3	31.3	40	NW			1		7			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.35	745.6	29.89	759.3	60.8	16.0	50	SW			2		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.02	737.0	29.78	756.4	53.2	11.8	51	W					10			0.004	0.1		Dr. Wierzbiski.
Eperies	28.97	735.7	29.84	757.8	57.2	14.0	43	S			3		6s		SE	0	0		Julius Mikolik.
Gratz	28.66	727.9	29.90	759.4	56.5	13.6	69	SE			3		0			0	0		Andreas Rospini.
Hermannstadt	28.54	724.9	29.96	761.0	54.3	12.4	59	NNE			3		3			0	0		Prof. Reissenberger.
Kremsmünster	28.52	724.5	29.85	758.3	54.3	12.4	48	WNW			5		0			0	0		Prof. C. Wagner.
Lemberg	28.79	731.2	29.77	756.1	52.9	11.6	59	NW			3		7			0.012	0.3		Dr. T. Stanecki.
Pola	29.80	756.8	29.91	759.6	69.1	20.6	48	S			1		9cs			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.68	753.9	29.96	761.0	57.2	14.0	47	S			1		0			0	0		Karl Stancel.
Trieste	29.84	757.9	29.94	760.5	64.8	18.2	50	W			1		1			0	0		P. Busin.
Vienna	29.17	740.9	29.85	758.3	58.5	14.7	90	WNW			4		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.47	723.1	29.97	761.2	54.0	12.7	60	WNW			1		10			0.126	3.2		
Brussels	29.77	756.1	29.97	761.2	60.3	15.7	61	WNW			5	1	9	NW	WNW	0.222	5.60		Royal Observatory.
Furnes																			
Maeseyck	30.02	762.5	30.15	765.8	57.4	14.1	72	NW			2		10			0.157	4.0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer
Aberdeen	29.91	759.7	30.01	762.2	55.0	12.8		NW	21	9.4			9			0.100	2.54	Showery	C. H. Thompson; W. Boswell.
Ardrossan	30.06	763.5	30.08	764.0	57	13.9		WNW			3		6					D. clouds	William McNeil.
Armagh, Observatory			30.20	767.1	54.9	12 7		NW	7	3.1			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.06	763.5	55.2	12.9		WNW	23	10.3			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.22	767.6	55.3	12.9		NW			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.61	752.1	30.09	764.3	60.0	15.6		NW			1		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)			29.89	759.2	83.8	28.8		NE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.02	762.5	57.0	13.9		NW			1		10			Blank	Blank	Overcast	H. Todd. [H. C
Cardington			30.05	763.3	57.6	14.2		N			1		10					Overcast	John McLaren.
Chatham, School M. E	29.89	759.2	30.02	762.5	60.2	15.7		NW			2		7					Overcast	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.66	728.0	30.13	765.3	56.0	13.3		N			3		6					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.10	764.5	30.13	765.3	58	14.4		N			4		8					D. clouds	J. Mac Gowan.
Dover	30.00	762.0	30.03	762.7	58	14.4		N			3		7					Gloomy	J. Costello.
Eccles, (near Manchester)			30.05	763.3	56.0	13.3		NW	5.0	2.2			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.92	760.0	30.15	765.8	60.6	15.9		NNW			3		7					Overcast	The Staff.
Fort Napier, (Natal)	28.08	713.2	30.30	769.6	58.3	14.6		S			4		8					D. clouds	Pvt. G. Salmon, A.H C.
Free Town, (Sierra Leone)			29.98	761.5	85.7	29.8		W			1		4					D. clouds	
Galway, Queen's College			30.18	766.6	58	14 4		NW			2		10					Gloomy	S. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.80	756.9	29.84	757.9	82.6	28.1		W			3		8					Overcast	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.86	758.4	30.16	763.5	59.1	15.1		WSW			2		8					D. clouds	D. G. Maclean.
Great Yarmouth	29.99	761.7	30.00	762.0	56	13.3		NNW			3		6					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.87	758.7	30.04	763.0	57.3	14.1		N			1		10					Misty	The Staff, for G. B. Airy.
Guernsey	29.87	758.7	30.09	764.3	62.5	16.9		NNE			1		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.19	766.8	64	17.8		N			4		10			0	0	Fine	M. P. Moyle.
Holyhead	30.05	763.3	30.10	764.5	56	13.3		NNW			5		10					Misty	John Tilston.
Jersey	29.84	757.9	30.14	765.5	62.6	17.0		NE			2		7			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory			30.05	763.3	59.1	15.1		NNW	7	3.1			10kd					Misty	The Staff.
Kingstown	30.15	765.8	30.18	766.6	57	13.9		NW			5		10					Overcast	George Mitchell.
Leicester, Museum			30.05	763.3	56.2	13.4		NW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.74	755.4	29.81	757.2	81.6	27.6		SE			1		8					Raining	Corp'l. P. Bravis, A.H.C.
Nairn	29.96	761.0	30.05	763.3	58	14.4		NW			3		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.87	758.7	85.8	29.9		SE			1		5			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.84	757.9	30.03	762.7	60.5	15.8		NW			2		8c		NW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.53	750.0	30.05	763.3	54.6	12.6		NW			3		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.06	763.5	57	13.9		WNW			1		10					Gloomy	F. Lucas
Plymouth	30.05	763.3	30.12	765 0	65.0	18.3		N			3		2					D. clouds	John Merrifield.
Roche's Point	30.16	766.1	30.20	767.1															W. Kennedy.
Saint Ann's Head	29.99	761.7	30.16	766.1	55	12.8		NW			2		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys)			30.04	763.0	52.6	11.4		NNW	23	10.3			10					Drizzling	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.99	761.7	70.2	21.2		NE			2		9					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.79	756.7	30.03	762.7	60.1	15.6		NW			2		7			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.00	762.0	30.03	762.7	65.1	18.4	72	W			2		6			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					66.9	13.8		W			1		10					Misty	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			30.09	764.3	56	13.3		NW			4		8					D. clouds	John Smith.
Strathfield Turgiss	29.?8?	756.4?	30.05?	764.3?	59.5	15.3		W			1		10					Overcast	Rev. C. H. Griffith, F.M.S
Thurso			30.00	762.0	54	12.2		NNW			5		7					D. clouds	John Trotter.
Truro, Royal Institution			30.16	766.1	65	18.3		N			6		7					D. clouds	W. Newcombe.
Valencia, Observatory			30.26	768.6	60.5	15.8		NNE	13	5.8			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		N			6		10						Henry Mercer.
Cape Good Hope, Obs'y	30.34	770 6	30.38	771.6	72.7	22.6	37	SSW	14	6.3		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.94	760.5	52.5	11.4	77	Calm			0		4k			0	0	Hazy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.03	762.7	62.8	17.1		W			2	6ck		N		0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.96	761.0	30.16	766.1	74.8	23.8	66	E	14.9	6.7		0	3		E	0	0	Bright	C. Meldrum.
Melbourne, Observatory	29.80	756.9	29.89	759.2	58.9	14.9	72	WNW	4	1.8			6			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.16	766.1	54	12.2		N			6		10			0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			30.00	762.0	46	7.8		N			4	4	7	N		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Direction from—		
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, 14 ft. Bank Light Ship			30.15	765 8	65	18.3		NE			2		9			2		D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine. N 50° 56′, W. 37° 50′			29.81	757.2	57	13.9		SW			6		6			6	SE	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller. N. 38° 25′, W. 72° 45′			36.08	764.0	70	21.1		NNE			5		5			4	ENE	D. clouds	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
San José	26.17	664.7			68.9	20.5	89	E			1		6c;s			0.6	15.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.57	751.0	29.61	752.2	48.4	9.1	61	NW			2		9						
Fanöe	29.62	752.4	29.64	752.9	52.9	11.6	63	NW			6		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.28	769.1	30.32	770.2	52.3	11.3	98	W			4		10					Rain & fog	
Thorshavn, (Faröe)	30.12	765.1	30.16	766.0	48.0	8.9	91	N			2		10					Raining	
Vestervig	29.45	748.1	29.62	752.4	50.0	10.0	68	NNW			4		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.56	750.9	30.11	764.9	62.6	17	68	NE			2		2		W	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.84	757.9	29.92	759.9	63.0	17.2	55	N			2		10			0	0	Covered	Mr. Giraud, Director.
Bar-sur-Seine	29.46	748.2	30.02	762.6	57.6	14.2	60	NNW			2		8			0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.76	756.0	30.05	763.2	59.5	15.3	73	N			1		10		NNW	0.069	1.75	Covered	Normal School.
Besançon	29.15	740.5	30.07	763.6	58.6	14.8	41	N			2		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.20	741.7	30.13	765.2	47.3	8.5	83	NW			1		Fog			0	0	Misty	Normal School.
Bourges, Normal School	29.51	749.6	30.06	763.5	59.4	15.2	60	NE			4		2		NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.84	757.8	30.05	763.3	62.4	16.9	72	N			3		2k		N	0	0		The Staff.
Carcassonne, Normal School	29.54	750.4	29.95	760.6	68.4	20.2	63	W			2		5			0	0	Cloudy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.71	754.6	30.03	762.7	55.9	13.3	84	NW			2		10n		NW	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.65	727.8	29.99	761.7	61.2	16.2	46	N			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.17	740.8	30.05	763.3	52.2	11.2	82	WNW			2		5		WNW	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.78	731.1	29.93	760.1	70.7	21.5	41	NE			2		8		E	0.020	0.5	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.85	758.2	30.07	763.7	58.3	14.6	72	N			6		2		N	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.80	756.9	30.11	764.8	56.8	13.8	84	NNE			1		10		NNE	0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.2	30.02	762.5	52.3	11.3	75	NE			6		10		NW	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.04	763.1	30.14	765.6	62.2	16.8	63	N			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.28	743.7	29.97	761.2	60.6	15.9	91	NNE			2		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.03	737.3	30.07	763.6	56.8	13.8	68	NNE			2		10		N	0.55	14.	Covered	Normal School.
Nismes, Normal School	29.78	756.3	29.97	761.1	88.7	31.5	32	N			6		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.79	756.7	30.03	762.8	57.7	14.3	81	NW			1		10		NNW	0	0	Covered	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.01	762.3	30.04	763.1	64.4	18.0	42	NE			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.97	761.3	30.06	763.5	61.5	16.4	63	NNW			2		10		N	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	28.93	734.8	29.90	761.7	65.1	18.4	34	NW			2		10		E	0	0	Covered	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.1	29.80	756.8	80.6	27										0.43	11.		L'Abbé Marchési.
Marseilles, Observatory			29.86	758.5	64.6	17.8	79	SSW			1		10			0.130	3.30	Rainy	The Staff.
Mont-Louis	24.82	630.3	30.13	765.3	48.6	9.2	65	SE	1.9	0.83			7		NW	0.012	0.3		Mr. Falgnère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.75	755.7	30.03	762.7	57.6	14.2	84	NW			2		10		NNW	Inap.	Inap.		Marié Davy, Director.
Perpignan			29.93	760.1	65.5	18.6	56	NW	5.6	2.50			10		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.10	558.3			37.8	3.2		NW			2		8					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.44	570.1			46.4	8.0		NW			1		9			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.87	758.6	30.03	762.8	59.0	15.0	78	NW			1		10		N	0	0	Covered	E. Renou.
Toulouse, Observatory	29.27	743.4	29.99	761.8	65.8	18.8	42	NW			1		8			0	0		The Staff.
Tours	29.85	758.8	30.05	763.3	60.8	16.0	64	NE			1		4		NNE	0	0		C. Marquet.
Versailles, (near Paris)			30.04	763.0	57.9	14.4	80	N			2		10					Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.07	763.7	30.09	764.3	68.9	20.5	92	Calm	0	0			10n			0.091	2.3	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.47	748.5	29.64	752.8	54.3	12.4	85	W			3		10			0.140	3.56		Prof. Arndt.
Breslau	29.23	742.4	29.75	755.7	49.3	9.6	68	WNW			7		10			0.019	0.47	Raining	Royal University Obs'y.
Carlsruhe	29.53	750.0	29.96	760.9	54.7	12.6	60	SW			3		10			0	0		Albert Senz.
Cassel	29.28	743.8	29.89	759.2	56.8	13.8	60	NW			5		8	NW		0	0		Dr. H. Möhl.
Crefeld	29.73	755.2	29.89	759.3	60.1	15.6	55	NW			5		8			0.04	1.		Director Lose.
Emden	29.78	756.4	29.82	757.3	53.6	12.0	90	NW			3		10			0.098	2.5		Prof. Prestel.
Frankfort on the Main	29.61	752.0	29.97	761.2	55.9	13.3	62	SW			2		9			0	0		Physical Society.
Friedrichshafen	28.56	725.3	29.99	761.8	52.5	11.4	74	SSW			4		1	SW		0.024	0.6		M. Wilhelm.
Hamburg	29.64	752.8	29.71	754.6	55.8	13.2	60	NW			5		9kn			0.122	3.1	Fair	Captain F. Hegemann.
Kiel	29.65	753.2	29.67	753.6	52.3	11.3	75	N			2		10			0.048	1.22		Prof. G. Karsten.
Königsberg, (Prussia)	29.39	746.5	29.46	748.3	50.7	10.4	51	NW			1								Prof. E. Luther.
Köslin			29.59	751.5	51.8	11.0		SW			2		4			0	0		H. Müller.
Leipsic, Observatory	29.39	746.4	29.81	757.1	52.9	11.6	75	WSW			4		10	W		0.024	0.6		Prof. Bruhns.
Memel, Naval School	29.43	747.4	29.47	748.6	49.3	9.6	59	NNW			2		10k;s					Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.48	748.9	29.54	750.2	50.4	10.2	67	NNW			3		10			0.343	8.7	Raining	A. Lothes.
Posen	29.47	748.5	29.76	755.9	50.4	10.2	86	WSW			8		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.45	747.9	29.99	761.8	58.5	14.7	52	Calm			0		9	W		0	0		Dr. Schur.
Stuttgart	28.99	736.4	29.93	760.3	56.3	13.5	61	NW			3		9	NW		0.059	1.5	Raining	Prof. Schoder.
Treves, (Trier)	29.31	744.5	29.83	757.7	57.9	14.4	64	WNW			5		10			0.115	2.93		Prof. Flesch.
Weissenburg, (Bavaria)	28.41	721.6	29.90	759.5	54.5	12.5	50	W			3		10	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.78	756.4	29.72	754.9	49.3	9.6	61	NNE			3		10						E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.7	29.93	760.3	81.1	27.3		SW										½ cloudy	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29 81	757.2	29.86	758.5	84.0	28.9	64	WSW	23.02	10.37			1			0	0	D. clouds	
Deesa																			
Bombay	29.83	757.8	29.87	758.7	83.5	28.6	79	NW	14.0	6.3			10		ESE	0	0	Misty	
Poona	27.82	706.5	29.83	757.7	75.1	23.9	84	W					10	SW	W	0.03	0.8	Thunder-storm	
Lahore	29.00	736.6	29.72	754.8	95.2	35.1	43	Calm	1.9	0.8			0			0	0	Blue sky	
Belgaum	27.36	694.9	29.90	759.5	75.9	24.4	91	W	1.0	0.4			8		NW	0.92	23.4	Thunder	
Bangalore																			
Roorkee	28.86	733.0	29.72	755.0	95.9	35.5	26	NW	2.2	1.0			5			0	0		
Agra	29.20	741.6	29.74	755.5	98.2	36.8	27	W								0	0		
Trichinopoly																			
Nagpur	28.80	731.4	29.82	757.4	89.5	31.9	45	Calm	2.8	1.2			5			0	0	D. clouds	
Madras																			
Lucknow	29.38	746.2	29.74	755.3	97.1	36.2	30	NNW	2.8	1.2			2	W		0	0	D. clouds	
Allahabad	29.44	747.6	29.74	755.3	91.2	32.9	57	Calm	2.2	1.0			5	NE		0	0	D. clouds	
Patna	29.58	751.3	29.76	755.8	90.5	32.5	63	E	1.1	0.5			4	E	E	0	0	D. clouds	
Hazaribagh	27.81	706.4	29.80	756.9	84.8	29.3	64	WNW	6.4	2.9			10			0	0		
Cuttack	29.74	755.5	29.82	757.5	85.8	29.9	73	Calm	5.8	2.6			3			0	0	D. clouds	
Calcutta (Alipore)	29.83	757.6	29.85	758.2	81.9	27.7	83	S	2.0	0.9			9			0	0	D. clouds	
Goalpara	29.43	747.5	29.82	757.4	78.9	26.1	91	S	4.7	0.8			8			0	0	D. clouds	
Chittagong	29.80	756.9	29.89	759.2	82.8	28.2	87	S	4.2	1.9			8			0	0	Overcast	
Sibsagar	29.48	748.7	29.81	757.2	83.4	28.6	85	SSW	1.9	0.8			10	SW		0.28	7.1	D. clouds	
Rangoon																			
Jubbulpore	28.50	723.8	29.85	758.2	86.3	30.2	62	NE	2.3	1.0			2	W		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 f., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.13	562.0	29.61	757.2	38.1	3.4	96	E			2		10			0	0		Ab. Dom. Morgini.
Stelvio	22.08	560.8	29.81	757.1	39.4	4.1		WSW			1		6	SSE		0	0		Signora Ernesta Manfredi.
Udine	29.50	749.3	29.90	759.5	62.1	16.7	52	W	0.7	0.3			8			0	0		Prof. Giovanni Clodig.
Padua	29.78	756.4	29.89	759.1	65.8	18.8	58	SE	6.3	2.8			5			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.69	754.2	29.88	758.9	66.9	19.4	57	S	1.8	0.8			3	S		0	0		Conte Alm. Da Schio.
Verona	29.67	753.5	29.88	758.9	78.8	26.0	50	W	4.9	2.2			10	W		0	0		Dott. B. Bertoncelli.
Bergamo	28.59	726.2	29.87	758.6	66.9	19.4	56	S			2		6			0	0		Prof. Trionfini Carlo.
Domodossola	28.83	732.3	29.82	757.4	65.8	18.8	46	S			6		8			0.087	2.2		Prof. Giuseppe Calza.
Milan	29.36	746.8	29.86	758.4	70.0	21.1	52	NW			2		5	NE		0	0		Ab. Gio. Capelli.
Pavia	29.56	750.7	29.89	759.2	66.2	19.0	56	E			1		3	NE		0	0		Prof. Gio. Cantoni.
Moncalieri	29.01	736.8	29.88	758.9	65.1	18.4	50	NNE	1.8	0.8			8	SW		0	0		Prof. P. F. Denza.
Mondovi	28.00	711.3	29.84	757.9	61.5	16.4	51	NW			2		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.61	752.0	29.82	757.5	72.1	22.3	42	E			6		9	W		0	0		Prof. L. Vassallo.
Genoa	29.69	754.2	29.86	758.4	71.1	21.7	36	N	6.3	2.8			6	N		0	0		Prof. G. M. Garibaldi
Piacenza	29.65	753.0	29.90	759.4	66.0	18.9	48	SE	4.9	2.2			2	SW		0	0		Dott. G. Manzi.
Parma	29.54	750.2	29.85	758.1	68.4	20.2	50	ESE			4		5			0	0		Prof. P. Pigorini.
Florence	29.60	751.9	29.85	758.1	70.1	24.5	30	SE			2		10			0	0		Cav. F. Meucci.
Leghorn	29.80	756.8	29.88	758.9	73.6	23.1	35	SE	8.1	3.6			10	W		0	0		Prof. P. Monte.
Siena	28.66	727.9	29.82	757.3	68.4	20.2	47	ESE	0.7	0.3			10	E		0.075	1.9		Prof. L. Toscani.
Urbino	28.36	720.3	29.88	758.9	61.2	16.2	65	E			2		9			0	0		Prof. P. Serpieri.
Pesaro	29.84	757.8	29.88	759.0	67.5	19.7	69	E	0	0			10	E		0	0		Prof. Luigi Guidi.
Ancona	29.74	755.3	29.84	757.9	66.7	19.3	60	SE			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.73	755.1	29.84	757.8	68.7	20.4	74	SSE			2		8	S		0	0		Avv. P. Ponticelli.
Rome	29.65	753.6	29.82	757.3	73.9	23.3	64	E	1.3	0.6			10			0.012	0.3		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.66	753.3	29.85	758.2	75.2	24.0	54	NNW			1		10	W		0	0		Prof. L. Palmieri.
Lecce	29.62	752.3	29.86	758.5	81.3	27.4	52	W	18.6	8.3			7	SW		0	0		Prof. C. DeGiorgi.
Cosenza	29.05	737.9	29.90	759.5	73.4	23.0	74	SSW	0.7	0.3			10			0.157	4.0		Prof. F. D. Conti.
Cagliari	29.47	748.6	29.66	753.3	71.6	22.0	78	NW			2		9	W		0.492	12.5		Prof. A. Pacinotti.
Riposto, (Sicily)	29.76	755.8	29.80	757.0	77.0	25.0	89	SE			6		10	NW		1.516	38.5		Prof. F. Cafiero.
Palermo	29.48	748.8	29.72	755.0	76.1	24.5	77	WSW	3.1	1.4			10			0.437	11.1		Prof. G. Cacciatore.
Caltanissetta	27.94	709.6	29.80	756.8	69.8	21.0	82	S			2		10			0.421	10.7		Prof. A. Pagani.
Syracuse	29.75	755.7	29.80	757.0	81.5	27.5	60	SW			4		8	WSW		0.295	7.5		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.32	744.6	29.87	758.7	71.6	22.0	66	NE	0.7	0.3			10	N		0.669	17.0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokiyo, Japan.

Tokiyo (Yeddo)																				The Observatory.
Tokiyo (Yeddo) University	29.98	761.5	30.06	763.5	71	21.7	92	Calm	0	0		9cs				0	0	Fair		Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico.

Mexico, Central Obs'y	23.14	587.7	30.19	766.7	57.0	13.9	72	Calm	0	0		1c	5ks	NE	NE	0.02	0.5	Foggy		Mariano Bárcena
																				Vicente Reyes.
																				Miguel Perez.
																				(Engineers in charge.)

Note.—The elevation of Mexico is 2,290 meters, or 7,512.9 feet. The rain-fall is measured at 6 a. m., local time.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.00	762.0	30.00	762.0	58.3	14.6		WNW			4					0.185	4.7			
Groningen	29.78	756.5	29.84	757.9	54.1	12.3		NW			2					0.055	1.4			
Helder	29.89	759.2	29.89	759.2	55.8	13.2		WNW			4					0.098	2.5			
Utrecht	29.89	759.1	29.93	760.3	57.0	13.9	74	WNW			3		10			0.189	4.8	Dull		H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Bergen	29.75	755.6	29.80	757.0	49.6	9.8	54	NNW	30.0	13.4			0			0	0			
Brönö	29.62	752.4	29.66	753.4	45.7	7.6	64	NNE	29	13			5			0.512	13.0			
Christiania	29.43	747.6	29.58	751.3	52.5	11.4	36	NNW	20to29	9 to 13			3			0	0			
Tromsö	29.66	753.3	29.70	754.4	44.6	7.0	74	NE	13	6			9			0	0			

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.82	757.5	30.01	762.3	67.6	19.8	72	N	4.3	1.9			3			0.079	2.0		Dr. J. A. Sampaio
Campo Major	28.85	732.9	29.84	758.0	79.5	26.4	27	N	3.8	1.7			5	WNW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.88	759.0	29.97	761.2	76.6	24.8	69	WNW	9.4	4.2			10			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.51	749.5	29.86	758.5	72.0	22.2	51	SSW	9.8	4.4			9	WNW		0	0	Solar halo	The Staff.
Ponta Delgada, (Azores)	29.94	760.5	30.01	762.3	71.2	21.8	64	NE	4.3	1.9			4	WSW		0.071	1.8		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India Ponta Delgada.				30.02	762.4	71.4	21.9	62	N			3		6	S	S	2		D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.20	741.6	29.62	752.3	46.6	8.1	89	SW	22	10			10					Raining	Astronomical Obs.
Wilna	29.04	737.5	29.45	748.1	47.1	8.4	96	SSW	4	2			10					Raining	Astronomical Obs.
Dorpat	29.10	739.2	29.34	745.3	48.4	9.1	63	S	4	2			9						Physical Cabinet.
St. Petersburg	29.43	747.6	29.45	748.0	46.0	7.8	50	SE	20	9			8						Central Physical Obs
Kuopio	29.07	738.3	29.38	746.3	47.5	8.6	73	SE	40	18			10						Ch. Forsten.
Xieff	29.11	739.5	29.75	755.6	49.3	9.6	62	WSW	9	4			9						Physical Cabinet.
Nikolaiev	29.90	759.4	29.97	761.2	57.6	14.2	49	WSW	9	4			8						Kurdakof.
Kertch	29.98	761 0	29.98	761.5	65.5	18.6	63	NW	4	2			7						Lagorio.
Moscow	28.75	730.2	29.31	744.4	35.6	2.0	96	N	13	6			10					Raining	Meteorological Obs
Lugan	29.50	751.5	29.79	756.7	51.8	11.0	60	W	22	10			6						Meteorological Obs
Archangel	29.65	753.1	29.67	753 6	46.9	8.3	65	S	9	4			9						Ogorodnikof.
Tiflis	28.46	722.8	29.78	756.5	86.5	30.3	31	SE	4	2			2						Physical Observatory.
Astrakhan	29.89	759.2	29.81	757.1	76.5	24.7	62	SSW	11	5			3						Sebastianof.
Kasan	29.27	743.4	29.54	750.2	49.6	9.8	86	SE	20	9			10						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	29.04	737.6	29.99	761.8	46.2	7.9	60	W	4	2			6						Meteorological Obs.
Nukuss	29.74	755.4	29.97	761.1	73.8	23.2	45	NNE	2	1			0						
Kasaly																			Bobrof.
Tashkend	28.37	720.7	30.04	763.0	66.9	19.4	86	Calm	0	0			3						Michelson.
Barnaul	29.66	753.4	30.18	766.5	56.8	13.8	57	NE	0	0			4						Meteorological Obs.
Yeniseisk	29.94	760.5	30.09	764.2	55.0	12.8	85	Calm	0	0			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.80	757.0	29.95	760.6	77.0	25.0	54	Calm	0	0			3						Physical Observator
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					49.1	9.5	83	W	16	7			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 396. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.70	703.6			75.2	24.0	40	S	4.5	2.00		0	6			0	0	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.76	756.5	29.87	758.6	80.2	26.8	82	Calm	0	0		1cs	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.81	757.1	29.90	759.6	77.4	25.2	76	SSE	15.5	6.9		2	8	NW	SW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.87	758.6	83.1	28.4	85	S	0	0		5k	1k			0.030	0.75	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Haparanda	29.51	749.5	29.55	750.5	42.4	5.8	97	NE			4		10			0.236	6.00	Raining	
Umea	29.31	744.4	29.56	750.8	43.2	6.2	97	NE			4		10			0.469	11.9	Raining	
Hernosand	29.28	743.6	29.33	744.9	41.0	5.0	90	NNW			6		10			0.063	1.6		
Stockholm	29.17	740.9	29.35	745.4	45.7	7.6	64	WNW			6		6			0.138	3.5		
Wisby	29.41	747.1	29.47	748.6	45.3	7.4	59	NW			7		5			0.138	3.5		
Sub-Series.																			
Upsala	29.27	743.5	29.35	745.4	45.9	7.7	65	WNW	12.1	5.4			8		NNW	0.218	5.54	Raining	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.55	725.1	29.97	761.1	56.8	13.8	60	N	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.36	720.3	29.99	761.7	56.5	13.6	61	W	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +1.8 mm; Thermometer, —3.8 cent.; Relative Humidity, — 4 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople	.....	.....	30.05	763.2	66.4	19.1	56	NNE	13	6.0	.....	.....	10	.....	N	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salonica	.....	.....	30.01	762.3	80.2	26.8	.....	SE	.....	.....	1	.....	8	.....	.....	.....	.....	.....	B. Stéfanidès.
Valona	.....	.....	30.02	762.5	75.4	24.1	.....	NW	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	30.00	762.0	71.6	22.0	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	Imperial Observatory.
SUB-SERIES.																			
Beirut, (Syria,) Lee Obs'y	29.87	758.7	29.98	761.6	83.8	28.8	64	W	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	29.76	755.9	29.83	757.7	56.1	13.4	73	NW	8	3.6	.....	.....	0	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.06	763.5	62	16.7	.....	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.86	758.4	50	10.0	85	W	9	4.0	.....	0	0	.....	.....	0.25	6.3	Clear	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.82	757.4	56	13.3	75	NW	5	2.2	.....	0	0	.....	.....	0.91	23.1	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.84	757.9	30.03	762.7	49.0	9.4	82	W	.....	.....	2	0	0	.....	.....	0	0	Bright	James Smith, M. A.
Dalhousie, N. B.	29.83	757.7	29.86	758.4	52.0	11.1	73	W	.....	.....	2	.....	.....	.....	.....	0.18	4.6	Bright	H. A. Johnson.
Esquimault, B. C.	29.95	760.7	30.00	762.0	44.3	6.8	100	NE	.....	.....	.....	9cs	0	.....	.....	0.05	1.3	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.91	759.7	46	7.8	90	SW	24	10.7	.....	0	2s	.....	W	0	0	Clear	J. McWilliams.
Fredericton, N. B.	29.88	758.9	29.94	760.5	50.0	10.0	79	NW	10	4.5	.....	0	0	.....	.....	0.23	5.8	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.97	761.2	38	3.3	96	E	2	0.9	.....	8k	8n	W	W	0.230	5.84	Cloudy	James Stewart.
Goderich, Ontario	29.29	744.0	30.07	763.8	57.8	14.3	78	SW	.....	.....	3	1c	1s	W	.....	0	0	Fair	H. J. Strang, M. A.
Granton, Ontario	28.97	735.8	30.08	764.0	47	8.3	85	SW	.....	.....	2	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S.	29.72	754.9	29.85	758.2	56	13.3	75	NW	10	4.5	.....	2ck	0	.....	.....	0.298	7.57	Fair	F. Allison, M. A.
Hamilton, Ontario	29.74	755.4	30.12	765.0	53.2	11.8	65	W	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.60	751.8	29.63	752.6	62	16.7	88	SW	.....	.....	5	.....	10n	.....	.....	0	0	Dense fog	E. Weedon.
*Kingston, Ontario	29.71	754.6	30.07	763.8	53	11.7	71	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.83	757.7	30.03	762.7	50	10.0	80	W	9	4.0	.....	0	0	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.28	743.7	29.96	761.0	57	13.9	87	SW	13	5.8	.....	2ck	5ks	W	W	Inap.	Inap.	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.32	744.7	30.07	763.8	45.7	7.6	96	W	.....	.....	1	0	0	.....	.....	0	0	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.41	747.0	30.11	764.8	44	6.7	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S.	29.73	755.1	29.78	756.4	59.5	15.3	.....	NW	8	3.6	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.45	748.0	30.11	764.8	42	5.6	90	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.66	753.4	29.98	761.5	50	10.0	86	W	10	4.5	.....	5k	8n	W	W	0	0	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.56	750.8	30.02	762.5	43	6.1	98	Calm	0	0	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	W. H. McIntyre.
St. John, N. B.	29.77	756.1	29.93	760.2	51	10.6	86	NW	2	0.9	.....	0	0	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.30	744.2	29.99	761.7	56	13.3	79	SW	2	0.9	.....	2ck	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	.....	.....	30.03	762.7	58	14.4	53	SW	13	5.8	.....	5k	0	W	.....	0	0	Fair	R. J. Cole.
Stratford, Ontario	28.78	731.0	30.06	763.5	50.0	10.0	66	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B.	29.72	754.9	29.75	755.6	62	16.7	67	NW	7	3.1	.....	2ck	2ks	.....	NW	0.02	0.5	Fair	T. C. Hill.
*Toronto, Ontario	29.70	754.4	30.09	764.3	48	8.9	68	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Jona E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
SUB-SERIES.																			
St. Johns, Newfoundland	.....	.....	.....	.....	66.0	18.9	94	SW	.....	.....	.....	10k	10s	.....	.....	0.01	0.3	Cloudy.	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford. 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.87	758.7	30.10	764.5	47	8.3	60	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Alpena, Michigan	29.28	743.7	29.92	760.0	54	12.2	67	SW	6	2.7	.....	2c	5s	SW	SW	Inap.	Inap.	Fair	
Atlantic City, New Jersey	30.10	764.5	30.12	765.0	58	14.4	75	N	6	2.7	.....	10cs	0	W	.....	0	0	Cloudy	
Augusta, Georgia	29.81	757.2	29.99	761.7	63	17.2	88	NE	7	3.1	.....	.....	10s	.....	NE	0.40	10.2	Cloudy	
Baltimore, Maryland	30.11	764.8	30.16	766.1	60	15.6	55	N	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Barnegat, New Jersey	30.09	764.3	30.12	765.0	60	15.6	70	N	9	4.0	.....	10cs	0	W	.....	0	0	Cloudy	
Bismarck, Dakota	28.08	713.2	29.72	754.9	45	7.2	76	W	1	0.4	.....	0	1s	.....	W	0	0	Clear	
Boise City, Idaho	27.16	689.8	29.77	756.1	47	8.3	85	Calm	0	0	.....	5cs	0	SE	.....	0	0	Fair	
Boston, Massachusetts	29.92	760.0	30.07	763.8	53	11.7	67	NW	9	4.0	.....	5cs	Haze	W	.....	0	0	Fair	
Brackettville, Texas	28.89	733.8	29.93	760.2	56	13.3	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.88	733.5	29.86	758.4	48	8.9	77	E	15	6.7	.....	10k	0	W	.....	0	0	Cloudy	
Brownsville, Texas	29.92	760.0	29.98	761.5	64	17.8	94	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.39	746.5	30.04	764.3	56	13.3	74	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.81	757.2	30.07	763.8	56	13.3	62	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Cairo, Illinois	29.68	753.9	30.08	764.0	54	12.2	61	N	13	5.8	.....	5cs	0	Calm	.....	0	0	Fair	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.80	680.7	30.29	769.4	60	15.6	70	Calm	0	0	.....	0	0	.....	.....	0.08	2.0	Clear	
Campo, California	27.36	694.9	29.93	760.2	47	8.3	54	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.95	760.7	29.96	761.0	70	21.1	66	NE	20	8.9	.....	5cs	5s	SW	NE	0	0	Cloudy	
Cape Henry, Virginia	30.03	762.7	30.06	763.5	67	19.4	90	N	25	11.2	.....	.....	10s	.....	N	0	0	Cloudy	
Cape Lookout, N. Carolina	29.99	761.7	30.00	762.0	72	22.2	75	NE	30	13.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape May, New Jersey	30.08	764.0	30.11	764.8	57	13.9	62	N	9	4.0	.....	10cs	0	SW	.....	0	0	Cloudy	
Charleston, South Carolina	29.88	758.9	29.95	760.7	68	20.0	90	NE	16	7.2	.....	.....	10n	.....	NE	0.47	11.9	Light rain	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	44	6.7	30	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.35	745.5	30.04	763.0	54	12.2	55	SW	8	3.6	.....	5k	0	SW	.....	0	0	Fair	
Cincinnati, Ohio	29.42	747.3	30.06	763.5	55	12.8	60	NE	2	0.9	.....	5cs	Fog	W	NE	0	0	Fair	
Cleveland, Ohio	29.42	747.3	30.15	765.8	49	9.4	71	E	6	2.7	.....	.....	Haze	.....	Calm	0	0	Hazy	
Concho, Texas	28.16	715.3	29.83	757.7	55	12.8	73	NW	6	2.7	.....	0	.....	.....	.....	0	0	Clear	
Corsicana, Texas	29.58	751.3	30.05	763.3	51	10.6	78	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.43	747.5	30.06	763.5	56	13.3	62	SW	5	2.2	.....	7k	0	W	.....	0	0	Fair	
Denison, Texas	29.27	743.4	30.07	763.8	54	12.2	73	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.87	631.7	30.09	764.3	46	7.8	33	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.39	746.5	30.06	763.5	51	10.6	33	SW	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Dodge City, Kansas	27.43	696.7	29.70	754.4	53	11.7	60	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.30	744.2	29.99	761.7	55	12.8	61	SW	6	2.7	.....	2ck	0	SW	.....	0	0	Fair	
Duluth, Minnesota	29.27	743.4	29.95	760.7	47	8.3	69	N	16	7.2	.....	8c	0	W	.....	0	0	Fair	
Eagle Pass, Texas	29.26	743.2	30.00	762.0	60	15.6	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.87	758.7	29.94	760.5	54	12.2	73	NW	6	2.7	.....	0	0	.....	.....	0.19	4.8	Clear	
Erie, Pennsylvania	29.39	746.5	30.10	764.5	52	11.1	79	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.21	742.7	29.88	758.9	50	10.0	72	W	8	3.6	.....	5c	0	W	.....	Inap.	Inap.	Fair	
Florence, Arizona	28.33	719.6	29.93	760.2	83	28.3	33	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.15	613.4	30.15	765.8	56	13.3	45	NE	4	1.8	.....	0	0	.....	.....	Inap.	Inap	Clear	
Fort Craig, New Mexico	25.64	651.2	.....	.....	52	11.1	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.52	749.8	30.08	764.0	44	6.7	92	N	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	
Fort Griffin, Texas	28.81	731.8	30.09	764.3	51	10.6	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.86	733.0	29.98	761.5	51	10.6	86	N	4	1.8	.....	2cs	0	Calm	.....	0	0	Clear	
Fort Sully, Dakota	28.23	717.0	29.86	758.4	54	12.2	73	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.89	759.2	29.93	760.2	60	15.6	70	N	24	10.7	.....	0	0	.....	.....	0	0	Cloudy	
Grand Haven, Michigan	29.36	745.7	29.99	761.7	63	17.2	61	SW	8	3.6	.....	0	8s	.....	SW	0	0	Cloudy	
Indianapolis, Indiana	29.32	744.7	30.12	765.0	46	7.8	85	N	2	0.9	.....	0	Sm'e	.....	.....	0	0	Clear	
Indianola, Texas	30.00	762.0	30.02	762.5	63	17.2	57	N	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.81	757.2	29.83	757.7	79	26.1	82	NE	5	2.2	.....	5k	0	SW	.....	0	0	Fair	
Keokuk, Iowa	29.43	747.5	30.04	763.0	59	15.0	58	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.80	756.9	29.83	757.7	84.5	29.2	71	S	4	1.8	.....	5k	0	SW	.....	0	0	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.05	763.5	68	20.0	62	NE	28	12.5	.....	2ck	2s	SW	NE	0	0	Fair	
Knoxville, Tennessee	29.00	736.6	30.00	762.0	56	13.3	81	NE	8	3.6	.....	10cs	0	NW	.....	0	0	Cloudy	
La Crosse, Wisconsin	29.23	742.4	29.96	761.0	53	11.7	79	S	4	1.8	.....	5k	0	Calm	.....	0	0	Fair	
La Mesilla, New Mexico	26.13	663.7	30.28	769.1	60	15.6	55	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	69	20.6	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.23	742.4	30.18	766.6	51	10.6	71	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.55	750.6	29.84	758.9	65	18.3	83	SE	2	0.9	.....	.....	10s	.....	SE	0	0	Cloudy	
Louisville, Kentucky	29.51	749.5	30.08	764.0	51	10.6	78	N	6	2.7	.....	5c	5s	W	W	0	0	Cloudy	
Lynchburg, Virginia	29.45	748.0	30.12	765.0	63	17.2	67	E	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	64	17.8	52	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.16	740.7	29.85	758.2	50	10.0	78	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.43	722.1	30.22	767.6	53	11.7	86	N	4	1.8	.....	.....	.....	.....	.....	0	0	Clear	
Memphis, Tennessee	29.66	753.4	29.97	761.2	55	12.8	73	NE	10	4.5	.....	10cs	0	SW	.....	0	0	Cloudy	
Milwaukee, Wisconsin	29.34	745.2	30.02	762.5	55	12.8	50	W	16	7.2	.....	1cs	Haze	SW	.....	0	0	Clear	
Mobile, Alabama	29.40	746.7	29.45	748.0	75	23.9	90	SE	28	12.5	.....	.....	10n	.....	SE	6.90	175.3	Heavy rain	
Montgomery, Alabama	29.50	749.3	29.72	754.9	68	20.0	92	NE	15	6.7	.....	.....	10n	.....	NE; SE	1.65	41.9	Light rain	
Morgantown, West Virginia	29.09	738.9	30.14	765.5	54	12.2	73	Calm	0	0	.....	8c	Haze	W	.....	0	0	Fair	
Mt. Washington, N. H.	23.74	603.0	30.10	764.5	29	— 1.7	100	NW	35	15.6	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.46	748.3	29.99	761.7	56	13.3	68	N	5	2.2	.....	10ck	0	W	.....	0	0	Cloudy	
New Haven, Connecticut	30.00	762.0	30.11	764.8	59	15.0	69	N	4	1.8	.....	2ck	2s	N	Calm	0	0	Fair	
New London, Connecticut	30.05	763.3	30.10	764.5	60	15.6	59	NW	6	2.7	.....	5cs	Haze	W	Calm	Inap.	Inap.	Hazy	
New Orleans, Louisiana	29.51	749.5	29.57	751.1	65	18.3	94	N	28	12.5	.....	.....	10n	.....	N	5.21	132.3	Light rain	
Newport, Rhode Island	30.02	762.5	30.07	763.8	60	15.6	61	NW	11	4.9	.....	8cs	0	NW	.....	0	0	Cloudy	
New York, New York	29.96	761.0	30.14	765.5	58	14.4	64	NW	7	3.1	.....	5ck	Fog	SW	Calm	0	0	Fair	
Norfolk, Virginia	30.04	763.0	30.10	764.5	64	17.8	88	NE	9	4.0	.....	.....	10s	.....	SW	0	0	Cloudy	
North Platte, Nebraska	27.06	687.3	29.61	752.1	48	8.9	74	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.95	760.7	29.99	761.7	49	9.4	93	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	28.88	733.5	29.95	760.7	51	10.6	78	S	4	1.8	.....	2k	0	W	.....	0	0	Clear	
Oswego, New York	29.78	756.4	30.10	764.5	55	12.8	61	S	5	2.2	.....	1k	0	Calm	.....	0	0	Clear	
Pembina, Dakota	29.15	740.4	29.98	761.5	39	3.9	82	NW	8	3.6	.....	8c	0	Calm	.....	0	0	Fair	
Philadelphia, Pennsylvania	30.10	764.5	30.15	765.8	57	13.9	57	N	8	3.6	.....	8cs	Fog	NW	Calm	0	0	Cloudy	
Phœnix, Arizona	.....	.....	.....	.....	69	20.6	47	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.99	456.9	30.20	767.1	30	— 1.1	43	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Pioche, Nevada	24.15	613.4	29.92	760.0	50	10.0	51	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.23	745.0	30.15	765.8	48	8.9	96	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.37	746.0	30.03	762.7	53	11.7	60	S	8	3.6	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Maine	29.97	761.2	30.02	762.5	54	12.2	67	W	8	3.6	.....	1k	Haze	W	.....	Inap.	Inap.	Clear	
Portland, Oregon	29.94	760.5	30.04	763.0	56	13.3	87	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	.....	.....	.....	.....	57	13.9	31	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.82	757.4	29.84	757.9	84	28.9	75	SE	12	5.4	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Red Bluff, California	29.47	748.5	29.81	757.2	67	19.4	33	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.46	748.3	30.08	764.0	50	10.0	78	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.43	747.5	30.00	762.0	50	10.0	93	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.70	754.4	29.78	756.4	65	18.3	48	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.53	750.0	30.10	764.5	53	11.7	80	NE	3	1.3			Fog		Calm	0	0	Foggy	
St. Marks, Florida	29.72	754.9	29.73	755.1	78	25.6	90	SE	14	6.3			10s		SE	1.12	28.4	Cloudy	
St. Paul, Minnesota	29.12	739.6	29.94	760.5	48	8.9	85	Calm	0	0			10s		Calm	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.72	653.3	30.05	763.3	53	11.7	42	S	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.33	745.0	29.91	759.7	62	16.7	61	NE	4	1.8		0	0			0	0	Clear	
San Diego, California	29.86	758.4	29.92	760.0	66	18.9	84	SW	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.46	748.3	30.14	765.5	50	10.0	71	S	10	4.5		1c	0	Calm		0	0	Clear	
Sandy Hook, New Jersey	30.10	764.5	30.12	765.0	61	16.1	55	N	11	4.9		10cs	0	W		0	0	Cloudy	
San Francisco, California	29.77	756.1	29.83	757.7	54	12.2	93	SW	8	3.6		0	Fog		SW	0	0	Fair	
Santa Fé, New Mexico	23.40	594.4	29.94	760.5	45	7.2	30	NE	1	0.4		0	Haze			0	0	Clear	
Savannah, Georgia	29.81	757.2	29.90	759.4	70	21.1	90	NE	11	4.9			10s		NE	0.12	3.0	Threatening	
Shreveport, Louisiana	29.75	755.6	29.97	761.2	55	12.8	68	N	8	3.6		0	0			0	0	Clear	
Smithville, North Carolina	29.98	761.5	30.01	762.2	66	18.9	78	N	15	6.7		5cs	5s	W	N	0	0	Cloudy	
Springfield, Massachusetts	29.93	760.2	30.06	763.5	56	13.3	68	Calm	0	0			10s			0	0	Cloudy	
Stanwix, Arizona					64	17.8	57	Calm				0	0			0	0	Clear	
Stockton, Texas					62	16.7	66	S	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass	30.00	762.0	30.06	763.5	54	12.2	73	NW	16	7.2		5cs	0	NW		0	0	Fair	
Toledo, Ohio	29.44	747.8	30.12	765.0	51	10.6	72	S	6	2.7		0	Haze		Calm	0	0	Hazy	
Tucson, Arizona	27.42	696.5	29.97	761.2	72	22.2	65	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	29.84	757.9	29.87	758.7	72	22.2	100	NE	28	12.5			10n		NE	0.24	6.1	Heavy rain	
Umatilla, Oregon	29.61	752.8			50	10.0	64	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.58	751.3	29.84	757.9	55	12.8	93	N	11	4.9			10n		N	1.65	41.9	Light rain	
Virginia City, Montana	24.36	618.7	29.84	757.9	42	5.6	58	SE	6	2.7		0	0			0	0	Clear	
Visalia, California	29.44	747.8	29.80	756.9	63	17.2	46	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	30.04	763.0	30.16	766.1	57	13.9	68	N	2	0.9			10s		W	0	0	Cloudy	
Wickenburg, Arizona					60	15.6	26	W				0	0			0	0	Clear	
Wilmington, N. Carolina	29.94	760.5	30.02	762.5	65	18.3	73	NE	11	4.9			10s		NE	0	0	Cloudy	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	41	5.0	33	NE	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	30.03	762.7	30.08	764.0	60	15.6	59	N	10	4.5		2c	0	NW		0	0	Fair	
Yankton, Dakota	28.63	727.2	29.92	760.0	46	7.8	84	N	1	0.4		8cs	0	NW		0	0	Cloudy	
Yuma, Arizona	29.65	753.1	29.81	757.2	67	19.4	29	S	2	0.9		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.72	754.9	29.77	756.1	36.0	2.2	95	NW	16	7.2			9s			0.20	5.1	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.79	756.7	29.81	757.2	80	30.0	75	Calm	0	0		4c	0	Calm		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	80	26.7	86	Calm	0	0		8c	5s	SE		0	0		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.80	756.9	29.88	758.9	84	28.9		E			2					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					83	28.3	87	E				5c	2n	E		0	0	Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.79	756.7	29.81	757.2	84	28.9	83	E				2k	5ks		E				L. V. Bigard.
Bridgetown, Barbados, W. I.	29.95	760.7	29.97	761.2	85	29.4	79	E	4	1.8		5k	5ks	NE		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.94	760.5	84	28.9	79	E			2	5k	0	E		0.300	7.62	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1			66.5	19.2	82	Calm			0	0	0			0.37	9.4	Clear	Thomas Herran.
Honolulu, Oahu, H. I.	30.00	762.0	30.02	762.5	74	23.3		NE			2					0.47	11.9		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,037.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1,750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phoenix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Plocher, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,362.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Plocher, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.87	758.7	63	17.2	59	15.0	82	SW	9	4.0			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	29.70	754.4			78	25.6	82	S	38	17.0			7		S	0.52	13.2			Raining	
Navy Yard, Portsmouth, N.H	30.08	764.0	68	20.0	52	11.1	79	W			1		9			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	30.04	763.0	73.5	23.1	72	22.2	88	WSW			1		10k;s		WSW	0	0			Cloudy	
Adams, Montevideo, Uraguay			68	20 0	56	13.3	??	SE			1		1		SW	0	0			D. clouds	
Alert, Yamada Bay, Japan	30.16†	766.1†	67	19.4	69	20.6	75	Calm			0		7		W					Hazy	
Alliance, Constantinople, Turkey.	30.15	765.8	69	20.6	68	20.0	90	NE			2		9		NE					Cloudy	
Ashuelot, Che-foo, China	30.11	764.8	80	26 7	73	22.8	76	SSW			1		1		Calm			Smooth		D clouds	
Canonicus, New Orleans, La	29.60	751.8	51	10.6	65	18.3	94	NNW			5–6		10							Cloudy	
Colorado, New York, N. Y.	30.19	766.8	64	17.8	61	16.1	61	NNW	8	3.6			7		W	0	0			Foggy	
Despatch, Varna, Turkey	30.12	765.0	73	22.8	69	20.6	39	WNW			3		2		Calm					Clear	
Essex, Madeira	29.98	761.5	76	24.4	79	26.1	86	W			3		6		W			Smooth	W	D. clouds	
Franklin, Norfolk, Va.	30.18	766.6	68	20.0	65	18.3	94	E	8	3.6			4		E	0	0			Cloudy	
Frolic, S. 6° 25′, W. 34° 17′	30.12	765.0	83	28.3	84	28.9	91	E			4		2k		Calm	0	0	Long	E	D. clouds	
Gettysburg, Naples, Italy	29.84‡	757.9‡			75	23 9	100	ESE			1		10		S	0	0			D. clouds	
Kearsarge, N. 15° 19′, E. 110° 11′	30.13	765.8			83	28.3	91	ESE			3		3		S&E	0	0	Smooth		D. clouds	
Lackawana, Port Townsend, W. T.	30.03	762.7			56	13.3	75	Calm			0		8		SE			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.99	761.7	81	27.2	82	27.8	60	WNW			3		9		WNW	0	0	Smooth		D. clouds	
Monocacy, Yokohama, Japan	30.06	763.5	73	22.8	74	23.5	86	NW			1		10		NW	0	0	Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.06	763 5			72	22 2	90	NE	24	10.7			10		NW	0.4	10.			D. clouds	
Omaha, Coquimbo, Chili	30.12	765 0	64	17.8	59.5	15.3	85	Calm	0	0			9		S&W	0	0	Smooth		Misty	
Onward, Callao, Peru	30.04	763.0	70	21.1	66	18.9	89	N			1		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.21	767.3	61	16.1	60	15.6	76	NNW			3		8		N					D. clouds	
Palos, Wanchow, China	30.10	764.5	75	23.9	75	23.9	90	SSE			1		6		Calm					Cloudy	
Pensacola, Mare Island, Cal.	29.95	760.7			69	20.6	75	SW			0–1		0			0	0			Clear	
Plymouth, New York, N. Y.	30.40	772.1	66	18.9	61	16.1	71	N			2		10		N					Cloudy	
Ranger, Nagasaki, Japan	30.14	765.5			70	21.1	90	Calm			0		10		Calm					Raining	
Rio Bravo, Brownsville, Texas	29.97	761.2			67	19.4	79	NNW			1		1		Calm					D. clouds	
Santee, Annapolis, Md.	30.11	767.3	63	17.2	61	16.1	66	NE			2		10		W	0	0			Cloudy	
St. Louis, League Island, Pa	30.02	762.5	58	14.4	58	14.4	60	NW	4	1.8			10		NW	0	0			Overcast	
Tennessee, Yokohama, Japan	29.92	760.0	78	25.6	75	23.9	86	SW	2	0.9			10		N&E	0	0	Smooth		D. clouds	
Trenton, Marseilles, France	29.99	761.7	68	20.0	68	20.0	79	NNW	5	2.2			10		Calm	0.5	13.			Raining	
Vandalia, Smyrna, Turkey	30.04	763.0	82	27.8	81	27.2	66	WNW			1		1							D. clouds	
Wabash, Boston, Mass.	30.09	764.3	55	12.8	57	13.9	63	NW	10	4.5			3		NW	0	0			D. clouds	
Wyoming, Washington, D. C.	30.40†	772 1	66	18.9	57	13.9		N&E			1		10							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 44° 35′, W. 152° 48′			30.32*	770.1*	50	10.0	100	NW			5		2		NW	Moderate.	NW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Hong Kong, China.					82	27.8		WSW			1		4		SW			Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental error or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 48° 30′, W. 31° 19′			29.97	761.2	62.0	16.7	74	SSE			3					High	SSE	Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.87	758.7	71	21.7	85	NE	17	7.6		10s			NE			Overcast	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 20, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIYO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.88	759.0	78.4	25.8	74	NW			2		2			0	0	Clear	Michel.
Algiers			29.84	758.0	79.9	26.6	67	N			1		4			0	0	Fair	Peter.
La Calle			29.86	758.5	72.3	22.4	74	NE			3		4			0	0	Fair	Fleury.
Tunis			29.91	759.8	89.6	32.0		W			6		7			0.079	2.0	Cloudy	Jacques.
Sfax			29.98	761.4	84.2	29.0		S			3		8			0	0	Cloudy	Husson.
Saida			29.87	758.7	78.3	25.7		S			1		2			0	0	Clear	Millot.
Tebessa			29.93	760.3	72.1	22.3		NW			1		4			0	0	Fair	Bourgeois.
Geriville			29.88	758.9	84.7	29.3	26	S			2		5			0	0	Fair	Lemaillot.
Laghouat			29.95	760.7	84.2	29.0	34	W			4		2			0	0	Clear	François.
Biskra			29.97	761.1	91.8	33.2	40	NW			1		7			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.11	739.4	29.64	752.9	64.2	17.9	61	SW			2		5			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	28.89	733.7	29.64	752.9	55.4	13.0	66	W					10			0.020	0.5		Dr. Wierzbiski.
Eperies	28.82	732.0	29.78	755.1	54.3	12.4	59	S			2		10s		Calm	0	0		Julius Mikolik.
Gratz	28.45	722.5	29.67	753.6	60.6	15.9	68	SW			3		4			0.122	3.1		Andreas Rospini.
Hermannstadt	28.30	718.9	29.71	754.6	54.9	12.7	70	SE			1		8			0	0		Prof. Reissenberger.
Kremsmünster	28.31	719.1	29.62	752.4	57.6	14.2	59	W			3		10			0.134	3.4		Prof. C. Wagner.
Lemberg	28.67	728.3	29.65	753.0	55.4	13.0	59	SW			3		8			0	0		Dr. T. Stanecki.
Pola	29.56	750.7	29.67	753.5	68.4	20.2	54	WNW			2		8cs			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.40	746.8	29.67	753.7	61.9	16.6	62	Calm			0		8			0.117	2.97		Karl Stancel.
Trieste	29.60	751.8	29.70	754.4	66.9	19.4	63	W			1		1			2.764	70.2		P. Busin.
Vienna	28.97	735.8	29.65	753.0	61.0	16.1	60	NW			3		9			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.23	717.1	29.72	755.0	54.1	12.3	78	SW			3		10			0.732	18.6		
Brussels	29.52	749.7	29.71	754.7	55.8	13.2	78	W			4		10		NW	0.311	7.90		Royal Observatory.
Furnes																			
Maeseyck	29.58	751.2	29.71	754.5	50.7	10.4	95	WSW			4		10			0.268	6.8	Raining	

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.77	756.1	29.87	758.7	46.9	8.3		N	16	7.2			9			0.235	5.97	Overcast	C. H. Thompson; W. Boswell.
Ardrossan	29.88	758.9	29.90	759.4	55	12.8		WNW			2		7					D. clouds	William McNeil.
Armagh, Observatory			29.95	760.7	55.0	12.8		NNE	4	1.8			7					Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.85	758.2	54.7	12.6		N	7	3.1			8					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.96	761.0	58.0	14.4		NW			1		9					Overcast	J. Dreyer.
Bradford, Yorkshire	29.45	748.0	29.84	757.9	51.5	10.8		N			1		10			0.02	0.5	Overcast?	J. McLandsborough.
Bridgetown, (Barbados)			29.84	757.9	83.0	28.3		E			4		5?			Blank	Blank	Overcast	Pvt. G. W. Roberts, A. H. C
Cambridge, Observatory			29.80	756.9	55.0	12.8		N			1		10					Overcast	H. Todd.
Cardington			29.83	757.7	53.0	11.7		NW			1		10					Gloomy	John McLaren.
Chatham, School M. E.	29.66	753.4	29.80	756.9	51.2	10.7		W			2		9					Showery	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.43	722.1	29.89	759.2	54.0	12.2		N			4		6						Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.86	758.4	29 89	759.2	56	13.3		NNE			4		3					D. clouds	J. Mac Gowan.
Dover	29.76	755.9	29.78	756.4	53	11.7		NNW			2		8					Drizzling	J. Costello.
Eccles, (near Manchester)			29.83	757.7	54.7	12.6		N	0.8	0.4			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.66	753.4	29.89	759.2	58.1	14.5		NW			3		10					Overcast	The Staff.
Fort Napier, (Natal)	28.00	711.2	30.22	767.6	60.1	15.6		SE			2		2					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.91	759.7	85.0	29.4		W			0		4					D. clouds	
Galway, Queen's College			29.92	760.0	58	14.4		NW			1		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.82	757.4	29.86	758.4	64.6	29.2		W			1		5					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.69	754.1	29.89	759.2	52.8	11.6		NNE			2		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.75	755.6	29.76	755.9	54	12.2		NW			3		6					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.63	752.6	29.80	756.9	51.1	10.6		NE			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.62	752.3	29.83	757.7	60	15.6		WNW			1		10					Showery	Dr. S. E. Hoskins, F.R.S.
Helston			29.93	760.2	59	15.0		NW			4		10k					Showery	M. P. Moyle.
Holyhead	29.82	757.4	29.87	758.7	55	12.8		NNE			5		3					D. clouds	John Tilston.
Jersey	29.58	751.3	29.87	758.7	59.0	15.0		NW			3		10					Overcast	J. Fisher.
Kew, Observatory			29.81	757.2	51.4	10.8		NNW	5	2.2			10kd					Raining	The Staff.
Kingstown	29.91	759.7	29.94	760.5	55	12.8		N			4		9					Overcast	George Mitchell.
Leicester, Museum			29.72	754.9	53.1	11.7		NE			2		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.78	756.4	29.86	758.4	82.0	27.8		NW			1		6					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	29.84	757.9	29.93	760.2	48	8.9		N			3		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			29.90	759.4	85.2	29.9		SE			3		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.67	753.6	29.56	758.4	53.5	11.9		N			2		10ck		NNW	0.022	0.56	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.31	744.5	29.83	757.7	52.0	11.1		NNE			3		9					Ligh mist	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.82	757.4	52	11.1		NNE			1		10					Misty	F. Lucas
Plymouth	29.78	756.4	29.85	758.2	58.8	14.9		N			2		10					Overcast	John Merrifield.
Roche's Point	29.93	760.2	29.97	761.2															W. Kennedy.
Saint Ann's Head	29.73	755.1	29.89	759.2	55	12.8		NW			2		10					Drizzling	John C. Walker.
Sandwick Manse, (Orkneys)			29.94	760.5	45.3	7.4		N	22	9.8			10					Drizzling	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.73	755.1	80.8	27.1		S			1		9					Gloomy	Sergt. W. H. Lyne.
Sheffield	29.61	752.1	29.83	757.7	53.9	12.2		N			2		9			0	0	Overcast	W. F. Cooper.
Siloth Rectory	29.84	757.9	29.87	758.7	55.2	12.9	61	W			1		1			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					52.9	11.6		N			1		10					D. clouds	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.95	760.7	49	9.4		N			2		8					D. clouds	John Smith.
Stratfield Turgiss	29.55	750.6	29.77	756.1	53.0	11.7		N			1		10					Raining	Rev. C. H. Griffith, F.M.S
Thurso			29.90	759.4	48	8.9		N			5		8					Showery	John Trotter.
Truro, Royal Institution			29.91	759.7	60	15.6		N			6		7					Squally	W. Newcombe.
Valencia, Observatory			29.90	761.7	58.8	14.9		NNW	13	5.8			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		N			4		5						Henry Mercer.
Cape Good Hope, Obs'y	30.03	762.7	30.07	763.8	78.0	25.6	37	SSE	14	6.3		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.72	754.9	53.5	11.9	83	Calm			0		6k						Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.91	759.7	50.0	10.0		N			2		10k			0	0	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.96	761.0	30.15	765.8	74.3	23.5	68	E	18.3	8.2		0	3		E	0	0	Bright	C. Meldrum.
Melbourne, Observatory	29.84	757.9	29.93	760.2	56.1	13.4	86	SSE	8	3.6			10			0.10	2.5	Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.01	762.2	51	10.6		NE			6		10			0.02	0.5		J. Youngclause.
North Unst, (Shetland Is.)			29.87	758.7	46	7.8		N			6	7	4	N		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters: Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Observer.
S. S. Algeria			Capt. W. Watson.
S. S. Batavia			Capt. J. E. Mouland.
Ship Camperdown			Capt. A. T. Miller.
Brig Catherine			Capt. Adam Smith.
Barque Celeste			Capt. D. F. McKechnie.
S. S. Hibernia			Capt. W. R. Cato.
Barque Maroon			Capt. A. T. Brown.
Ship Mikado			Capt. C. C. Prehn.
S. S. Seine. N. 51° 20′, W. 34° 30′	5	SE	Capt. H. Manning.
Barque Sorata			Capt. Jas. J. Price.
Schooner Traveller. N. 37° 50′, W. 71° 10′	4	ENE	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.22	666.0			68.0	20.0	95	NE			1		9cs			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.43	747.4	29.47	748.6	45.1	7.3	89	W			2		9						
Fanöe	29.48	748.7	29.50	749.2	51.4	10.8	62	WSW			2		6						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.26	768.4	30.30	769.5	50.9	10.5	96	E			2		0?						Rain & fog?.
Thorshavn, (Faröe)	30.01	762.3	30.05	763.2	45.9	7.7	77	NE			2		10						
Vestervig	29.35	745.6	29.52	749.9	49.6	9.8	63	N			2		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.34	745.2	29.89	759.2	62.6	17	85	NE			1		10		W	0	0	Covered	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.77	756.2	29.85	758.2	69.8	21	41	N			3		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.24	742.8	29.81	757 1	56.7	13.7	87	W			1		10		W	0.059	1.5	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.55	750.5	29.83	757.7	58.8	14.9	68	NW			2		10		NW	0.035	0.90	Covered	Normal School.
Besançon	28.91	734.2	29.81	757.1	57.6	14.2	63	S			3		8		SW	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.05	737.9	29.97	761 2	57.2	14	74	NE			1		5n		NW	0	0	Cloudy	Normal School.
Bourges, Normal School	29.30	744.2	29.85	758.1	56.3	13.5	89	W			3		10		W	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.1	29.83	757.7	58.5	14.7	80	N			3		10		N			Rainy	The Staff.
Carcassonne, Normal School	29.47	748.4	29.87	758.8	70.3	21.3	49	W			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.47	748.4	29.78	756.3	62.1	16.7	66	NW			3		5n		NW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.51	724.1	29.83	757.6	64.9	18.3	63	N			1		5		NW	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	28.93	734.7	29.80	756.9	54.3	12.4	83	W			4		10		W	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.69	728.8	29.84	757.8	65.5	18.6	35	NW			4		2		NW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.66	753.4	29.87	758.8	64.4	18	67	W			2		8		W	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.56	750.8	29.86	758.5	60.8	16	71	W			2		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.96	735.6	29.87	758.7	55.4	13	81	S			1		10		E	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	29.79	756.7	29.89	759.2	62.6	17.0	70	W			2		10		NW	0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.18	741.2	29.86	758.5	61.7	16.5	86	N			2		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.80	731.5	29.83	757.6	55.9	13.3	86	NNE			2		10		N	0.110	2.8	Covered	Normal School.
Nismes, Normal School	29.78	756.3	29.97	761.2	87.4	30.8	27	N			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.57	751.1	29.81	757.1	61.9	16.6	57	NW			1		9k		NW	0.038	0.97	Almost cov'd	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.87	758.8	29.91	759.6	68.4	20.2	59	W			1		10		SW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.74	755.3	29.82	757.5	60.4	15.8	67	NW			1		10		NW	0.079	2.0	Covered	F. Lucard, Director.
Tarbes, Normal School	28.87	733.2	29.92	760.0	66.2	19	47	NW			1		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.74	755.5	29.77	756.2	82.9	28.3										0.87	22.		L'Abbé Marchési.
Marseilles, Observatory			29.78	756.5	68.4	20.2	40	NW			3-4		0			0	0		The Staff.
Mont-Louis	24.76	628.8	30.07	763.8	57.6	14.2	39	SSW	9.3	4.17			2		SW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.53	750.0	29.80	757.0	61.2	16.2	57	NW			2		10		NW	0.031	0.8		Marié Davy, Director.
Perpignan			29.89	759.3	69.3	20.7	45	NW	5.6	2.50			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.17	537.6			45.5	7.5		SSW			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.43	569.7			48.0	9.4		SSW			2		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.64	752.9	29.81	757.1	61.0	16.1	63	NW			1		10		WNW	0.106	2.7		E. Renou.
Toulouse, Observatory	29.19	741.5	29.91	759.8	65.1	18.4	36	NW			2		1			0	0		The Staff.
Tours	29.65	753.0	29.84	758.0	61.2	16.2	77	W			1		10		WNW	0.016	0.4		C. Marquet.
Versailles, (near Paris)			29.81	757.2	61.5	16.4	58	N			1		9			0.068	1.72	Almost cov.	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.99	761.8	30.02	762.4	69.8	21.0	99	NE	0.2	0.1		5ck		ESE		0.331	8.4	Lunar corona	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:55, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10	Clouds. Amount. Up'er 0–10	Low'r 0–10	Direction. Upper From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Berlin	29.41	747.0	29.58	751.3	52.7	11.5	66	S			1		10			0.142	3.61	Raining	Prof. Arndt.
Breslau	29.09	738.8	29.61	752.1	48.0	8.9	93	NW			3		10			0.201	5.11	Raining	Royal University Obs'y.
Carlsruhe	29.28	743.8	29.71	754.5	52.5	11.4	95	SW			4		10			0.177	4.5	Raining	Albert Senz.
Cassel	29.11	739.4	29.71	754.7	54.0	12.2	67	W			4		8	WNW		0.077	1.96		Dr. H. Möhl.
Crefeld	29.48	748.9	29.65	753.0	55.9	13.3	65	NW			3		8kn			0.16	4.		Director Lose.
Emden	29.55	750.5	29.58	751.4	52.0	11.1	70	N			4		2			0.165	4.2		Prof. Prestel.
Frankfort on the Main	29.32	744.6	29.67	753.6	55.2	12.9	60	W			1		9			0.453	11.5		Physical Society.
Friedrichshafen	28.37	720.6	29.80	756.8	53.6	12.0	73	SW			6		10	W		0.035	0.9		M. Wilhelm.
Hamburg	29.43	747.5	29.50	749.3	51.1	10.6	75	WSW			2		7k			0.091	2.3	Showery	Captain F. Hegemann.
Kiel	29.49	749.1	29.51	749.6	50.0	10.0	74	W			2		6			0.056	1.42		Prof. G. Karsten.
Königsberg, (Prussia)	29.40	746.7	29.47	748.5	50.2	10.1	49	W			2								Prof. E. Luther.
Köslin			29.53	750.1	48.7	9.3		SW			4		4			0.547	13.9		H. Müller.
Leipsic, Observatory	29.21	741.8	29.62	752.4	54.3	12.4	71	SSW			1		9	WSW		0.106	2.7		Prof. Bruhns.
Memel, Naval School	29.39	746.4	29.43	747.6	51.8	11.0	61	W			5		5k	W				Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.49	749.0	29.50	749.4	53.6	12.0	56	W			4		7			0	0		A. Lothes.
Posen	29.33	745.0	29.62	752.3	51.4	10.8	85	NW			2		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.22	742.3	29.77	756.2	53.8	12.1	89	SW			2		10	W		0.550	13.97	Raining	Dr. Schur.
Stuttgart	28.78	730.9	29.71	754.7	53.6	12.0	79	W			3		10	W		0.193	4.9	Raining	Prof. Schoder.
Treves, (Trier)	29.08	738.5	29.59	751.6	56.8	13.8	71	NW			4		10			0.497	12.63		Prof. Flesch.
Weissenburg, (Bavaria)	28.20	716.3	29.70	754.3	48.9	9.4	92	W			1		10	WNW		0.130	3.3		Dr. Von Bebber.
Wustrow, Naval School	29.51	749.5	29.56	750.8	52.0	11.1	69	W			2		10						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.47	748.5	29.85	758.1	80.4	26.9		S										½ cloudy	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.81	757.1	29.86	758.4	84.6	29.2	65	SW	23.0?	10.3?			0			0	0	Blue sky	
Deesa																			
Bombay	29.81	757.2	29.85	758.2	84.5	29.2	82	NW	14.0	6.3			8	NW		0	0	Misty	
Poona	27.80	706.2	29.80	757.0	78.6	25.9	78	S					10	NW	S	0.10	2.5	Thunder-storm	
Lahore	28.99	736.3	29.71	754.6	95.2	35.1	35	SW	1.9	0.8			0			0	0	Blue sky	
Belgaum	27.34	694.4	29.90	759.3	72.8	22.7	89	W	8.0	3.6			10		NE	0.70	17.8	Lightning	
Bangalore																			
Roorkee	28.82	732.0	29.69	754.1	96.1	35.6	24	NW	2.9	1.3			5			0	0		
Agra	29.17	740.8	29.71	754.6	97.7	36.5	25	N								0	0		
Trichinopoly																			
Nagpur	28.76	730.5	29.79	756.6	88.5	31.4	49	N	2.9	1.3			6			0	0	Gloomy	
Madras																			
Lucknow	29.34	745.2	29.70	754.3	97.1	36.2	28	NNW	2.9	1.3			2	W		0	0	D. clouds	
Allahabad	29.40	746.7	29.70	754.4	91.8	33.2	50	Calm	2.5	1.1			0			0	0	Blue sky	
Patna	29.54	750.4	29.72	755.0	86.0	30.0	68	E	1.1	0.5			6	E	E	0.03	0.8	D. clouds	
Hazaribagh	27.77	705.3	29.76	755.9	82.8	28.2	77	WNW	5.2	2.3			9			0	0		
Cuttack	29.69	754.2	29.77	756.2	85.0	29.4	77	E	4.6	1.8			4			0	0	D. clouds	
Calcutta (Alipore)	29.77	756.2	29.80	756.8	83.7	28.7	85	WSW	1.0	0.4			7			0	0	D. clouds	
Goalpara	29.39	746.4	29.78	756.3	79.0	26.1	90	Calm	1.0	0.4			2			0.11	2.8	D. clouds	
Chittagong	29.76	755.8	29.85	758.1	82.3	27.9	89	SW	4.2	1.9			10			0	0		
Sibsagar	29.46	748.7	29.79	756.6	83.2	28.4	86	WNW	1.8	0.8			10	E		0.51	13.0	D. clouds	
Rangoon																			
Jubbulpore	28.45	722.7	29.80	756.9	86.9	30.5	61	SW	2.1	0.9			2	SW		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.98	558.4	29.67	753.6	40.6	4.8	84	NW			2		9	NW		0	0		Ab. Dom. Morgini.
Stelvio	21.93	557.1	29.66	753.4	35.6	2.0		WNW			1		10			0.004	0.1		Signora Ernesta Manfredi.
Udine	29.24	742.8	29.65	753.0	66.0	18.9	60	SW	1.8	0.8			9			0	0		Prof. Giovanni Clodig.
Padua	29.53	750.1	29.64	752.8	68.7	20.4	50	SW	4.9	2.2			7			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.45	748.1	29.65	753.0	70.7	21.5	48	S	8.7	3.9			4	W		0	0		Conte Alm. Da Schio.
Verona	29.43	747.6	29.65	753.0	71.6	22.0	46	NE	0	0			2	WSW		0	0		Dott. B. Bertoncelli.
Bergamo	28.37	720.7	29.65	753.1	68.4	20.2	55	SW			1		8			0	0		Prof. Trionfini Carlo.
Domodossola	28.65	727.6	29.63	752.7	65.7	18.7	57	S			4		8			0.004	0.1		Prof. Giuseppe Calza.
Milan	29.15	740.5	29.65	753.1	71.6	22.0	49	W			1		5	NW		0	0		Ab. Gio. Capelli.
Pavia	29.35	745.4	29.68	753.9	69.3	20.7	47	S			4		3	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.79	731.2	29.66	753.3	67.6	19.8	42	SSE	2.5	1.1			2	NE		0	0		Prof. P. F. Denza.
Mondovi	27.79	705.8	29.62	752.4	65.5	18.6	48	NW			2		1	SE		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.46	748.2	29.67	753.7	71.4	21.9	52	SW			4		3	W		0	0		Prof. L. Vassallo.
Genoa	29.53	750.0	29.69	754.2	68.7	20.4	58	S	1.8	0.8			8	N		0	0		Prof. G. M. Garibaldi
Placenza	29.48	747.5	29.68	753.8	68.4	20.2	55	NW	1.8	0.8			7	W		0	0		Dott. G. Manzi.
Parma	29.37	746.1	29.68	753.9	68.9	20.5	59	NE			2		3			0	0		Prof. P. Pigorini.
Florence	29.47	748.6	29.72	754.8	74.3	23.5	35	SW			4		9			0	0		Cav. F. Meucci.
Leghorn	29.64	752.9	29.72	755.0	71.1	21.7	74	S	5.6	2.5			9	W		0	0		Prof. P. Monte.
Siena	28.54	724.8	29.69	754.2	70.0	21.1	43	SW	2.5	1.1			4	W		0	0		Prof. L. Toscani.
Urbino	28.20	716.3	29.72	754.9	64.0	17.8	67	SE			2		6			0.315	8.0		Prof. P. Serpieri.
Pesaro	29.66	753.3	29.71	754.5	66.4	19.1	78	SW	0	0			4			0.118	3.0		Prof. Luigi Guidi.
Ancona	29.60	751.9	29.71	754.5	68.0	20.0	61	NW			4		3			0.213	5.4		Prof. F. DeBosis.
Grosseto	29.65	753.2	29.76	755.9	72.3	22.4	54	SSW			2		3	S		0.409	10.4		Avv. P. Ponticelli.
Rome	29.56	750.7	29.72	755.0	73.9	23.3	71	NW	3.8	1.7			10			0.209	5.3		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.54	750.4	29.73	755.2	77.4	25.2	60	SW			1		9	SW		0.614	15.6		Prof. L. Palmieri.
Lecce	29.53	750.0	29.77	756.2	80.1	26.7	43	S	16.8	7.5			4	S		0.322	8.2		Prof. C. DeGiorgi.
Cosenza	28.96	735.6	29.81	757.2	75.2	24.0	67	SSE	0	0			6			1.378	35.0		Prof. F. D. Conti.
Cagliari	29.60	751.7	29.78	756.4	77.0	25.0	40	NW			4		5	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.69	754.1	29.74	755.3	77.0	25.0	73	ENE			2		7	SE		0.835	21.2		Prof. F. Cafiero.
Palermo	29.54	750.4	29.79	756.6	79.5	26.4	54	WSW								0.012	0.3		Prof. G. Cacciatore.
Caltanissetta	27.94	709.8	29.80	757.0	73.8	23.2	65	W			4		7	SE		0.106	2.7		Prof. A. Pagani.
Syracuse	29.73	755.1	29.80	757.0	81.5	27.5	60	SW			4		8	WSW		0.295	7.5		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.21	741.9	29.76	756.0	72.0	22.2	60	NE	13.7	6.1			8	NE		0.028	0.7		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokiyo, Japan.

Tokiyo (Yeddo)																			The Observatory.
Tokiyo (Yeddo) University	29.87	758.7	29.97	761.2	.65	18.3	94	Calm	0	0			8 fg.;s			0.018	0.45	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.13	587.4	30.17	766.3	46.4	8.0	100	NW	2.2	0.97		0	10k		NW	0	0	Hazy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuata, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Cordoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.74	755.4	29.74	755.4	56.1	13.4		NW			4					0.031	0.8		
Groningen	29.55	750.5	29.60	751.9	51.1	10.6		NNW			4					0.205	5.2		
Helder	29.65	753.0	29.65	753.0	53.6	12.0		NW			4					0.169	4.3		
Utrecht	29.63	752.5	29.67	755.7	55.6	13.1	68	WNW			3		5			0.083	2.1	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.57	751.0	29.62	752.4	50.0	10.0	57	NNW	19.7	8.8			0			0	0		
Brönö	29.68	753.8	29.72	754.8	50.7	10.4	46	ENE	7	3			2			0	0		
Christiania	29.35	745.5	29.50	749.2	50.5	10.3	70	N	7	3			10			0	0		
Tromsö	29.76	755.8	29.80	756.9	45.0	7.2	64	NE	4	2			0			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.80	757.0	29.99	761.8	67.3	19.6	77	W	6.9	3.1			2			0	0		Dr. J. A. Sampaio
Campo Major	28.85	732.8	29.85	758.3	72.1	22.3	55	S	8.7	3.9			10	S		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.87	758.6	29.95	760.8	75.0	23.9	61	SW	9.4	4.2			3			0.102	2.6		Capt. D. A. de Cunha.
Lisbon, Observatory	29.43	747.6	29.79	756.6	68.5	20.3	92	S	13.7	6.1			10			0.173	4.4		The Staff.
Ponta Delgada, (Azores)	29.94	760.5	30.01	762.3	72.7	22.6	64	W	3.8	1.7			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Direction from—		
S. S. India Ponta Delgada.				30.03	762.7	70.5	21.4	70	NW			3		7	NW	NW	2		D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.16	740.7	29.58	751.4	51.1	10.6	84	SSW	4	2			10					Raining	Astronomical Obs.
Wilna	29.11	739.4	29.53	750.0	50.9	10.5	61	SW	7	3			8						Astronomical Obs.
Dorpat	29.14	740.2	29.38	746.3	50.4	10.2	52	SSW	7	3			4						Physical Cabinet.
St. Petersburg	29.37	746.1	29.39	746.5	40.1	4.5	91	E	4	2			10						Central Physical Obs.
Kuopio	29.15	740.5	29.48	748.7	42.4	5.8	82	E	22	10			10						Ch. Forsten.
Kieff	29.08	738.5	29.70	754.3	56.5	13.6	58	SSW	7	3			10						Physical Cabinet.
Nikolaiev	29.76	755.9	29.83	757.7	61.5	16.4	79	S	4	2			10						Kurdakof.
Kertch	29.95	760.7	29.97	761.2	71.8	22.1	78	SSE	9	4			5						Lagorio.
Moscow	29.10	739.1	29.65	753.0	46.8	8.2	82	S	13	6			8						Meteorological Obs.
Lugan	29.78	756.4	29.98	761.5	60.6	15.9	54	SSE	9	4			8						Meteorological Obs.
Archangel	29.44	747.8	29.46	748.3	36.5	3.6	90	NE	18	8			10					Raining	Ogorodnikof.
Tiflis	28.60	726.5	29.94	760.4	87.8	31.0	26	Calm	0	0			0						Physical Observatory.
Astrakhan	30.23	767.9	30.15	765.8	62.8	17.1	47	NNE	7	3			1			Blank	Blank		Sebastianof.
Kasan	29.56	750.8	29.83	757.7	51.8	11.0	55	SW	13	6			10						Physical Cabinet.
Orenburg	29.55	750.6	29.93	760.2	43.5	6.4	79	SW	13	6			10						Tschernischef.
Ekaterinburg	28.84	732.6	29.78	756.3	55.0	12.8	65	W	22	10			10						Meteorological Obs.
Nukuss	29.76	755.8	29.98	761.5	77.9	25.5	49	NNE	0	0			0						
Kasaly																			Bobrof.
Tashkend	28.40	721.4	30.06	763.5	69.1	20.6	89	Calm	0	0			2						Michelson.
Barnaul	29.66	753.4	30.18	766.5	56.3	13.5	36	WNW	2	1			8						Meteorological Obs.
Yeniseisk	29.67	753.5	29.81	757.2	48.7	9.3	92	S	7	3			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.75	755.7	29.89	759.3	75.9	24.4	55	S	18	8			2						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					42.3	5.7	93	W	18	8			10					Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.66	702.5			78.8	26.0	41	SW	6.0	2.67		0	8			0	0	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.82	757.5	29.91	759.6	80.7	27.1	82	SSW	3.4	1.5		3cs	1k	NE		0.024	0.6	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.82	757.5	29.92	759.9	76.1	24.5	68	SSW	12.4	5.6		0	10		SW	0.217	5.5		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.89	759.2	83.8	28.8	86	SE				4cs	1k		E	0.030	0.75	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Haparanda	29.69	754.0	29.72	755.0	43.9	6.6	62	NE			6		7			0.079	2.0		
Umea	29.56	750.7	29.61	752.0	45.3	7.4	77	E			4		10			0.587	14.9		
Hernosand	29.50	749.3	29.57	751.0	42.1	5.6	75	NE			7		10			0.677	17.2		
Stockholm	29.15	740.5	29.33	745.0	42.4	5.8	97	N			4		10			0.043	1.1	Raining	
Wisby	29.26	743.1	29.32	744.6	46.8	8.2	73	NNW			6		3			0.051	1.3		
Sub-Series.																			
Upsala	29.28	743.8	29.36	745.7	45.7	7.6	73	NNE	11.4	5.1			7		NE	0.120	3.06		Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Geneva	28.42	721.8	29.82	757.5	61.3	16.3	51	Var.					10			0	0	Covered	The Observatory.
Zurich	28.19	716.1	29.84	757.8	52.2	11.2	84	W			2		10		SW	0	0	Covered	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —5.1 mm; Thermometer, —1.2 cent.; Relative Humidity, —13 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Constantinople			29.80	756.8	78.4	25.8	63	SSE	0	0			9		S	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.80	756.8	80.2	26.8		NW			1		10						B. Stéfanidès.
Valona			29.91	759.8	83.7	28.7		SW			2		2			0.51	13.	Slightly cl'dy	A. Bertrand.
Varna			29.84	758.0	69.8	21.0		E			2		10			Blank	Blank		Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'ty	29.98	761.5	29.91	759.7	82.9	28.3	64	N			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Bathurst, N. B.	29.89	759.2	29.96	761.0	49.8	9.9	89	Calm	0	0			10			0	0		Hon. J. Ferguson.
Brockville, Ontario			29.98	761.5	66	18.9		SW	5	2.2		2c	0	SW		0	0	Fair	W. R. Bigg.
*Chatham, N. B.			29.97	761.2	49	9.4	80	SW	7	3.1			10s		SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.99	761.7	56	13.3	62	NW	10	4.5		0	0			0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.76	755.9	29.95	760.7	56.8	13.8	80	N			1	0	0			0	0	Bright	James Smith, M. A.
Dalhousie, N. B.	29.98	761.5	30.01	762.2	48.3	9.1	77	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	29.70	754.4	29.75	755.6	54.2	12.3	100	Calm					10			Inap	Inap.	Rainy	W. H. Bevis.
*Father Point, Quebec			29.95	760.7	49	9.4	78	S	6	2.7		5ck	5s	SW	SW	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.97	761 2	30.04	763.0	49.4	9.7	88	SE	1	0.4		10ck	0	W		Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			30.08	764.0	34	1.1	98	Calm	0	0		2c	2s		Calm	0	0	Fair	James Stewart.
Goderich, Ontario	29.24	742.7	30.03	762.7	50.2	10.1	88	Calm			0	7ck	2s	W		0.115	2.92	Fair	H. J. Strang, M. A
Granton, Ontario	28.88	733.5	29.99	761.7	48	8.9	100	SW			1	2c	0			0	0	Clear	James Grant.
*Halifax, N. S.	29.88	758.9	30.01	762.2	55	12.8	74	NW	6	2.7		5ck	0			0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.66	753.4	30.03	762.7	54.7	12.6	71	SW			2	2c	0	W		0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.75	755.6	29.77	756.1	55	12.8	74	W			4	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.63	752.6	29.99	761.7	60	15.6	87	Calm	0	0		8k	0	Calm		0	0	Cloudy	S. Woods, M. A.
*Montreal, Quebec	29.78	756.4	29.97	761.2	57	13.9	81	W	4	1.8		2ck	2ks	W		Inap.	Inap.	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.31	744.5	30.00	762.0	46	7.8	94	N	9	4.0		2cs	0	NW		0.16	4.1	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.25	742.9	29.98	761.5	55.7	13.2	78	Calm			0	7k	0			0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.33	745.0	30.02	762.5	49	9.4	85	NW	3	1.3		8ck	0	SW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.92	760.0	29.96	761.0	57.5	14.2		NW	2	0.9						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.37	746.0	30.02	762.5	47	8.3	93	NW	2	0.9		2k	0	W		0	0	Clear	M. Payne.
*Quebec, Quebec	29.64	752.8	29.96	761.0	53	11.7	86	Calm	0	0		5k	2n		Calm	0.05	1.3	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.57	751.1	30.04	763.0	46	7.8	92	E	4	1.8			5s		Calm	0.80	20.3	Fair	W. H. McIntyre.
St. John, N. B.	29.87	758.7	30.03	762.7	48	8.9	85	Calm	0	0		10k	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.29	744.0	29.99	761 7	52	11.1	95	Calm	0	0		0	0			0	0	Clear	K. Stewart.
Stayner, Ontario			29.99	761.7	53	11.7	80	Calm	0	0		2c	0	W		0	0	Fair	R. J. Cole.
Stratford, Ontario	28.72	729 5	30.00	762.0	47.2	8.4	98	Calm	0	0		2cs	5s	W		0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.92	760.0	29.94	760.5	62	16.7	69	W	10	4.5		0	2ks		W	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.62	752.3	30.01	762.2	51	10.6	79	SW	2	0.9		5cs	0	W		0	0	Fair	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					57.0	13.9	87	NW				0	0			0	0	Fair	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.84	757.9	30.06	763.5	54	12.2	73	NW	2	0.9		5cs	0	Calm		0	0	Fair	
Alpena, Michigan	29.36	745.7	30.01	762.2	47	8.3	77	NW	6	2.7		2ck	2s	NW	NW	0.10	2.5	Fair	
Atlantic City, New Jersey	30.05	763.3	30.07	763.8	64	17.8	62	NE	9	4.0		8cs	0	W		0	0	Cloudy	
Augusta, Georgia	29.66	753.4	29.84	757.9	61	16.1	94	NE	5	2.2			10n		NE	0.81	20.6	Light rain	
Baltimore, Maryland	30.03	762.7	30.08	764.0	59	15.0	76	SE	4	1.8		2ck	2s; fg	NW	Calm	0	0	Fair	
Barnegat, New Jersey	30.05	763.3	30.07	763.8	64	17.8	52	E	6	2.7		8c	Haze	SW	Calm	0	0	Fair	
Bismarck, Dakota	28.25	717.5	29.96	761.0	36	2.2	70	N	1	0.4		1c	1s	Calm	Calm	0	0	Clear	
Boise City, Idaho	27.01	686.0	29.52	749.8	59	15.0	70	Calm	0	0		5ck	0	SW		0	0	Fair	
Boston, Massachusetts	29.92	760.0	30.07	763.8	60	15.6	65	W	2	0.9		4cs	Fog	W		0	0	Fair	
Brackettville, Texas	28.92	734.6	29.96	761.0	56	13.3	62	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	29.05	737.9	30.07	763.8	39	3.9	95	N	4	1.8		2cs	0	Calm		0	0	Fair	
Brownsville, Texas	29.95	761.1	30.02	762.5	64	17.8	68	NW	5	2.2		0	0			0	0	Clear	
Buffalo, New York	29.29	744.0	29.98	761.5	59	15.0	64	S	8	3.6		8c	0	SW		0	0	Fair	
Burlington, Vermont	29.75	755.6	30.01	762.2	58	14.4	63	S	6	2.7		8c	0	S		0	0	Fair	
Cairo, Illinois	29.63	752.6	30.02	762.5	57	13.9	69	N	14	6.3		10cs	0	Calm		0	0	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.81	681.0	30.30	769.6	60	15.6	60	Calm				0	0			0	0	Clear	
Campo, California	27.34	694.4	29.91	759.7	49	9.4	64	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.81	757.2	29.82	757.4	68	20.0	94	NE	32	14.3			10n		Calm	1.87	47.5	Heavy rain	
Cape Henry, Virginia	29.92	760.0	29.95	760.7	65	18.3	94	NE	32	14.3			10n		NE	1.12	28.4	Light rain	
Cape Lookout, N. Carolina	29.95	760.7	29.86	758.4	74	23.3	100	NE	10	4.5			10n		SW	1.37	34.8	Light rain	
Cape May, New Jersey	30.01	762.2	30.04	763.0	62	16.7	71	NE	4	1.8			10s		Calm	0	0	Cloudy	
Charleston, South Carolina	29.76	755.9	29.82	757.4	66	18.9	94	NE	10	4.5			10s		NE	1.33	33.8	Cloudy	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	39	3.9	56	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.22	742.2	29.90	759.4	58	14.4	70	SW	7	3.1		0	0			0	0	Clear	
Cincinnati, Ohio	29.31	744.5	29.95	760.7	55	12.8	76	N	1	0.4		2cs	Fog	W	N	0	0	Foggy	
Cleveland, Ohio	29.32	744.7	30.04	763.0	53	11.7	73	E	5	2.2		2c	5s	W	Calm	0	0	Fair	
Concho, Texas	28.18	715.8	29.90	759.4	53	11.7	79	NW	8	3.6		0				0	0	Clear	
Corsicana, Texas	29.59	751.6	30.06	763.5	51	10.6	78	N	6	2.7		0	0			0	0	Clear	
Davenport, Iowa	29.35	745.5	29.98	761.5	56	13.3	74	W	4	1.8		Haze	0	Calm		0	0	Clear	
Denison, Texas	29.29	744.0	30.08	764.0	59	15.0	64	N	4	1.8		0	0			0	0	Clear	
Denver, Colorado	24.90	632.4	30.12	765.0	47	8.3	27	S	5	2.2		0	0			0	0	Clear	
Detroit, Michigan	29.29	744.0	29.95	760.7	56	13.3	80	W	1	0.4		5cs	Sm'e	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.47	697.7	29.77	756.1	49	9.4	77	W	2	0.9		0	0			0	0	Clear	
Dubuque, Iowa	29.25	742.9	29.94	760.5	55	12.8	80	Calm	0	0		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.36	745.7	30.04	763.0	48	8.9	77	NE	8	3.6		8c	1s	NW	Calm	0.08	2.0	Cloudy	
Eagle Pass, Texas	29.29	744.0	30.03	762.7	63	17.2	57	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.93	760.2	30.00	762.0	56	13.3	74	S	6	2.7		8c	2s	W	SW	0	0	Cloudy	
Erie, Pennsylvania	29.28	743.7	29.98	761.5	57	13.9	69	S	6	2.7		8c	Sm'e	SW		0	0	Cloudy	
Escanaba, Michigan	29.37	746.0	30.02	762.5	50	10.0	65	NE	12	5.4			10s		NE	0	0	Cloudy	
Florence, Arizona	28.33	719.6	29.93	760.2	84	28.9	19	E				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.17	613.9	30.17	766.3	56	13.3	34	N	10	4.5		0	0			Inap	Inap.	Clear	
Fort Craig, New Mexico	25.64	651.2			49	9.4	51	NW	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.53	750.0	30.08	764.0	46	7.8	85	Ca'm	0	0		0	Fog			0	0	Clear	
Fort Griffin, Texas	28.84	732.5	30.14	765.5	50	10.0	78	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.86	733.0	29.98	761.5	52	11.1	86	NW	2	0.9		0	0			0	0	Clear	
Fort Sully, Dakota	28.35	720.1	30.03	762.7	43	6.1	75	SE	6	2.7		0	Haze			0	0	Clear	
Galveston, Texas	29.94	760.5	29.99	761.7	66	18.9	73	N	16	7.2		0	0			0	0	Clear	
Grand Haven, Michigan	29.27	743.4	29.91	759.7	52	11.1	93	E	8	3.6		0	8s		W	0.10	2.5	Cloudy	
Indianapolis, Indiana	29.22	742.2	30.00	762.0	51	10.6	86	Calm	0	0		8cs	Sm'e	W		0	0	Fair	
Indianola, Texas	30.01	762.2	30.04	763.0	64	17.8	61	N	14	6.3		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.74	755.4	29.76	755.9	77	25.0	95	S	12	5.4			10s		S	0.43	10.9	Cloudy	
Keokuk, Iowa	29.34	745.2	29.94	760.5	63	17.2	67	SW	4	1.8		0	0			0	0	Clear	
Key West, Florida	29.82	757.4	29.86	758.4	84.0	28.9	75	SW	8	3.6		2cs	1ks	W	Calm	Inap.	Inap.	Fair	
Kittyhawk, North Carolina	29.93	760.2	29.95	760.7	65	18.3	100	NE	24	10.7			10n		NE	2.43	61.7	Heavy rain	
Knoxville, Tennessee	28.93	734.8	29.92	760.0	56	13.3	87	N	5	2.2			10ks		NW	0.07	1.8	Cloudy	
La Crosse, Wisconsin	29.20	741.7	29.94	760.5	49	9.4	100	Calm	0	0			Fog			0	0	Foggy	
La Mesilla, New Mexico	26.13	663.7	30.28	769.1	59	15.0	54	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					62	16.7	46	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.19	741.4	30.02	762.5	55	12.8	80	Calm	0	0		0	Fog			0	0	Clear	
Los Angeles, California	29.59	751.6	29.92	760.0	66	18.9	78	NW	2	0.9			10s		NW	0	0	Cloudy	
Louisville, Kentucky	29.43	747.5	29.99	761.7	54	12.2	79	N	6	2.7		5c	2s	W	Calm	0	0	Fair	
Lynchburg, Virginia	29.34	745.2	30.01	762.2	61	16.1	77	NE	4	1.8			10n		Calm	0.15	3.8	Light rain	
Maricopa Wells, Arizona					62	16.7	61	E				0	0			0	0	Clear	
Marquette, Michigan	29.30	744.2	30.00	762.0	52	11.1	72	SW	4	1.8			10s		Calm	0.06	1.5	Cloudy	
Mason, Texas	28.44	722.4	30.23	767.8	50	10.0	86	N	2	0.9						0	0	Clear	
Memphis, Tennessee	29.63	752.6	29.95	760.7	58	14.4	81	N	8	3.6		8cs	0	SW		0	0	Cloudy	
Milwaukee, Wisconsin	29.26	743.2	29.93	760.2	56	13.3	87	N	2	0.9		0	Sm'e		N	0.26	6.6	Clear	
Mobile, Alabama	29.56	750.8	29.60	751.8	62	16.7	97	W	11	4.9			10n		W	0.14	3.6	Light rain	
Montgomery, Alabama	29.50	749.3	29.72	754.9	61.5	16.4	94	E	14	6.3			10n		E	0.50	12.7	Light rain	
Morgantown, West Virginia	28.98	736.1	30.02	762.5	54	12.2	79	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.79	604.3	30.15	765.8	35	1.7	80	NW	40	17.9		2c	Haze	NW	NW	0	0	Clear	
Nashville, Tennessee	29.40	746.7	29.93	760.2	59	15.0	76	N	6	2.7		8cs	0	Calm		0	0	Fair	
New Haven, Connecticut	29.96	761.0	30.08	764.0	52	11.1	86	NW	4	1.8		10ck	Haze	SW		0	0	Cloudy	
New London, Connecticut	30.05	763.3	30.10	764.5	55	12.8	80	Calm	0	0		6c; ck	1s	E; W	Calm	0	0	Fair	
New Orleans, Louisiana	29.69	754.1	29.75	755.6	64	17.8	72	NW	17	7.6			10ks		N	0.02	0.5	Cloudy	
Newport, Rhode Island	30.03	762.7	30.08	764.0	62	16.7	78	N	2	0.9		9k	0	W		0	0	Cloudy	
New York, New York	29.92	760.0	30.10	764.5	57	13.9	69	W	3	1.3		5ck	2ks	SW	SW	0	0	Cloudy	
Norfolk, Virginia	29.94	760.5	30.00	762.0	63	17.2	100	E	8	3.6			10n		Calm	0.79	20.1	Light rain	
North Platte, Nebraska	27.17	690.1	29.76	755.9	45	7.2	80	NW	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.76	755.9	29.80	756.9	53	11.7	86	S	5	2.2			10s		S	0.02	0.5	Cloudy	
Omaha, Nebraska	28.93	734.8	30.00	762.0	53	11.7	79	W	2	0.9		0	0			0	0	Clear	
Oswego, New York	29.69	754.1	30.01	762.2	58	14.4	69	SE	6	2.7		10cs	0	W		0	0	Cloudy	
Pembina, Dakota	29.24	742.7	30.00	764.3	36	2.2	90	S	4	1.8		10ck	0	Calm		0	0	Cloudy	
Philadelphia, Pennsylvania	30.03	762.7	30.08	764.0	57	13.9	75	NE	6	2.7		8cs	Haze	SW	Calm	0	0	Cloudy	
Phœnix, Arizona					69	20.6	47	W				0	0			0	0	Clear	
Pike's Peak, Colorado	18.05	458.5	30.26	768.6	30	−1.1	59	SW	8	3.6		0	0			0	0	Clear	
Pioche, Nevada	24.12	612.6	29.89	759.2	58	14.4	17	SW	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.21	741.9	30.03	762.7	47	8.3	100	NE	2	0.9			Fog			0	0	Foggy	
Port Huron, Michigan	29.32	744.7	29.98	761.5	51	10.6	72	Calm	0	0		10cs	0	W		0	0	Cloudy	
Portland, Maine	29.97	761.2	30.02	762.5	58	14.4	64	SW	11	4.9		2k	Haze	W		0	0	Fair	
Portland, Oregon	29.84	757.9	29.94	760.5	54	12.2	93	SE	2	0.9		0	5s		Calm	0	0	Fair	
Prescott, Arizona					53	11.7	23	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.83	757.7	29.84	757.9	84	28.9	71	W	18	8.0		0	8ks		W	0.29	7.4	Threatening	
Red Bluff, California	29.11	747.0	29.76	755.9	63	17.2	47	Calm	0	0		0	Haze		Calm	0	0	Clear	
Rochester, New York	29.38	746.2	29.98	761.5	56	13.3	68	SW	8	3.6		5c	Haze	SW	Calm	0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.42	747.3	29.99	761.7	47	8.3	92	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.71	754.6	29.79	756.7	58.5	14.7	73	S	8	3.6		1c	Sm'e	S	Calm	0	0	Smoky	
St. Louis, Missouri	29.46	748.3	30.03	762.7	57	13.9	81	S	4	1.8		0	Sm'e		Calm	0	0	Clear.	
St. Marks, Florida	29.69	754.1	29.71	754.6	74	23.3	85	SW	4	1.8		0	5s		SW	1.17	29.7	Fair	
St. Paul, Minnesota	29.14	740.1	29.97	761.2	49	9.4	77	NW	3	1.3		5cs	0	Calm		Inap.	Inap.	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.66	651.8	29.99	761.7	58	14.4	31	SE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.36	745.7	29.94	760.5	62	16.7	61	N	3	1.3		0	0			0	0	Clear	
San Diego, California	29.86	758.4	29.93	760.2	65	18.3	83	N	3	1.3			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.34	745.2	30.01	762.2	53	11.7	73	SW	8	3.6		4c	Sm'e	SW		0	0	Fair	
Sandy Hook, New Jersey	30.07	763.8	30.09	764.3	62	16.7	66	SW	3	1.3		10ck	0	SW		0	0	Cloudy	
San Francisco, California	29.82	757.4	29.88	758.9	58	14.4	81	SW	12	5.4		0	5s		SW	0	0	Fair	
Santa Fé, New Mexico	23.44	595.4	29.98	761.5	53	11.7	25	SE	4	1.8		0	Haze			0	0	Clear	
Savannah, Georgia	29.70	754.4	29.79	756.7	65	18.3	94	NE	5	2.2			10n		NE	0.59	15.0	Light rain	
Shreveport, Louisiana	29.78	756.4	30.00	762.0	60	15.6	71	NW	5	2.2		0	0			0	0	Clear	
Smithville, North Carolina	29.81	757.2	29.84	757.9	75	23.9	90	SE	18	8.0			10s		SE	1.21	30.7	Threatening	
Springfield, Massachusetts	29.90	759.4	30.03	762.7	52	11.1	79	Calm	0	0		8ck	Fog	SW	Calm	0	0	Cloudy	
Stanwix, Arizona					64	17.8	52	SW				0	0			0	0	Clear	
Stockton, Texas					56	13.3	70	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	58	14.4	81	SW	4	1.8		5c;ck	0	NW		0	0	Fair	
Toledo, Ohio	29.30	744.2	29.97	761.2	55	12.8	87	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Tucson, Arizona	27.42	696.5	29.97	761.2	72	22.2	49	S				0	0			0	0	Clear	
Tybee Island, Georgia	29.76	755.9	29.78	756.4	68	20.0	100	N	16	7.2			10n		NE	0.74	18.8	Light rain	
Umatilla, Oregon	29.56	750.8			60	15.6	70	N	4	1.8		0	0			0	0	Clear.	
Vicksburg, Mississippi	29.62	752.3	29.88	758.9	58	14.4	87	NW	14	6.3		8cs	2s	Calm	N	1.22	31.0	Cloudy	
Virginia City, Montana	24.28	616.7	29.76	755.9	45	7.2	60	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.46	748.3	29.82	757.4	61	16.1	66	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	29.95	760.7	30.07	763.8	62	16.7	70	NE	4	1.8		5ck	0	W		0	0	Fair	
Wickenburg, Arizona					64	17.8	29	S				0	0			0	0	Clear.	
Wilmington, N. Carolina	29.80	756.9	29.87	758.7	66	18.9	94	NE	8	3.6			10s		S	0.84	21.3	Cloudy	
Winnemucca, Nevada	25.69	650.2	29.96	761.0	48	8.9	23	SE	5	2.2		0	0			0	0	Clear.	
Wood's Holl, Mass	30.05	763.3	30.10	764.5	63	17.2	72	SW	7	3.1		0	5s		SW	0	0	Fair	
Yankton, Dakota	28.80	731.5	30.11	764.8	43	6.1	83	W	1	0.4		0	0			0	0	Clear	
Yuma, Arizona	29.66	753.4	29.82	757.4	67	19.4	41	SE	4	1.8		2k	0	SE		0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.95	760.7	30.00	762.0	31.0	—0.6	95	N	10	4.5		5ck	0	E		Inap.	Inap.	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.86	758.4	29.88	758.9	85	29.4	75	S	4.8	2.1		8ck;cs	0	Calm		0.17	4.3	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	82	27.8	87	Calm	0	0		2c	2ks	SE		0.01	0.3		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.86	758.4	29.94	760.5	84	28.9		E			2					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					85	29.4	79	E				2ck	2ks	E		0	0	Clear.	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.82	757.4	29.84	757.9	78	25.6	95	E				10k	0					Cloudy	L. V. Bigard.
Bridgetown, Barbados, W. I.	29.96	761.0	29.97	761.2	84	28.9	79	E	4	1.8		5k	10n	NE		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.95	760.7	83	28.3	75	E			2	3c	6k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1			68.[illegible]	20.3	90	Calm			0	6cs	8ks			0.04	1.0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.05	763.3	30.07	763.8	74	23.3		S			2					0.11	2.8		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the ***SECRETARY OF THE NAVY.***

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., *Chief of Bureau of Navigation.*

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.87	758.7	58	14.4	56	13.3	87	SW	10	4.5			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	29.70	754.4			67	19.4	84	W	11	4.9			10		W	0.1	3.			D. clouds	
Navy Yard, Portsmouth, N.H.	30.08	764.0	68	20.0	57	13.9	69	W			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	29.86	758.4	69	20.6	66	18.9	89	NW			1		10k;s		NW	0.58	14.7			Cloudy	
Adams, Montevideo, Uraguay	29.80	756.9	63	17.2	58	14.4	82	SE			4		10		W	0	0	Light	SE	Squally	
Alert, Miyako Bay, Japan	29.88†	758.9†	66	18.9	66	18.9	94	SW			1		3		SW					Hazy	
Alliance, Constantinople, Turkey	29.93	760.2	75	23.9	76	24.4	68	Calm			0		9		SSW					Cloudy	
Ashuelot, Che-foo, China	30.16	766.1	78	25.6	74	23.3	72	SE			0–1		1		Calm			Smooth		D. clouds	
Canonicus, New Orleans, La.	29.74	755.4	49	9.4	65	18.3	78	NW			4		10		N&W					Cloudy	
Colorado, New York, N. Y.	30.17	766.3	64	17.8	59	15.0	65	WSW	3	1.3			7		WSW	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	29.37	761.2	80	26.7	77	25.0	69	SSW			2–5		4		Calm					Pleasant	
Essex, Madeira	29.97	761.2	76	24.4	79	26.1	91	S			1		2		S			Smooth	SW	D. clouds	
Franklin, Norfolk, Va.	30.06	763.5	64	17.8	65	18.3	100	ESE	8	3.6			7		ESE	0.8	20.			Rainy	
Frolic, S. 4° 16′, W. 34° 58′	30.16	766.1	82	27.8	82	27.8	96	SE			4		3k		Calm	0	0	Moderate.	S&E	D. clouds	
Gettysburg, Naples, Italy	29.76‡	755.9‡			76	24.4	100	SW			1		7		SW					Showery	
Kearsarge, N. 11° 51′, E. 109° 24′	30.13	765.3			82	27.8	96	SSW			4		2		S&W	1.3	33.	Smooth		Lightning	
Lackawana, Port Townsend, W. T.	29.76	755.9			56	13.3	87	Calm			0		10					Smooth		D. clouds	
Marion, Smyrna, Turkey	29.94	760.5	82	27.8	87	30.6	42	SSE			3		4		Calm	0	0	Smooth		D. clouds	
Monocacy, N. 35° 42′, E. 141° 09′	29.89	759.2	72	22.2	72	22.2	85	N			4		7		N&E	Blank	Blank	Moderate.	SE	D. clouds	
New Hampshire, Port Royal, S. C.	29.95	760.7			69	20.6	90	NE	19	8.5			10			0.2	5.			D. clouds	
Omaha, Coquimbo, Chili	30.04	763.0	63.5	17.5	63.5	17.5	92	Calm	0	0			5		S&W	0	0	Smooth		Hazy	
Onward, Callao, Peru	30.04	763.0	71	21.7	66	18.9	89	Calm	0	0			10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.11	764.8	64	17.8	59	15.0	76	WNW			1		7		W					D. clouds	
Palos, N 28° 30′, W. 121° 51′	30.05	763.3	79	26.1	74	23.3	90	ENE			4		10		E			Moderate	E	Misty	
Pensacola, Mare Island, Cal.	29.98	761.5			60	15.6	88	SW			4		10		Calm	0	0			Cloudy	
Plymouth, New York, N. Y.	30.37	771.4	64	17.8	60	15.6	76	Calm			0		9		SW					Cloudy	
Ranger, Nagasaki, Japan	30.08	764.0			74	23.3	76	Calm			0		9		Calm					Drizzling	
Rio Bravo, Brownsville, Texas	29.91	759.7			63	17.2	89	WNW			1		0							Blue sky	
Santee, Annapolis, Md.	30.13	765.3	64	17.8	62	16.7	72	ENE			3		7		SW	0	0			Cloudy	
St. Louis, League Island, Pa	30.03	762.7	61	16.1	59	15.0	88	NE	3	1.3			6		SW	0	0			Fair	
Tennessee, N. 34° 53′ 20″ E. 140° 15′ 53″	30.11	764.8	73	22.8	71	21.7	85	N	10	4.5			10		S	0.60	15.2	Moderate.	N&E	D. clouds	
Trenton, Marseilles, France	29.93	760.2	69	20.6	69	20.6	56	WNW	15.2	6.8			1		N&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.98	761.5	85	29.4	85	29.4	44	S			2–3		3		S					D. clouds	
Wabash, Boston, Mass.	30.11	764.8	61	16.1	60	15.6	71	SW	2	0.9			7		Calm	0	0			D. clouds	
Wyoming, Washington, D. C.	30.34†	770.6†	62	16.7	59	15.0		E			1		8			0	0			D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 46° 08′, W. 155° 52′			30.40*	772.1*	57	13.9	69	WSW			4		10		WSW	Small	W	Overcast	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 22° 78′, E. 115° 38′					82	27.8		SSW			3		3		NE	Moderate.	SE	Threatening	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental error or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 47° 15′, W. 37° 34′			29.85	758.2	62.0	16.7	94	SSE			5		Haze			Long	SW	Overcast	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction From—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio																			Captain Morrison.
Five Fathom Light Ship.																			
S. S. Pennsylvania			29.98*	761.5*	69	20.6	75	E			4				E	Small	SE	Threatening	Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.76	755.9	68	20.0	90	NE	8	3.6			10s		NE			Overcast	Capt. James Jorgenson.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 21, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIYO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.89	759.2	77.7	25.4	79	Calm			0		6			0	0	Fair	Michel.
Algiers			29.82	757.5	82.8	28.2	54	N			2		6			0	0	Fair	Peter.
La Calle			29.85	758.1	86.4	30.2	61	E			1		8			0	0	Cloudy	Fleury.
Tunis			29.89	759.2	75.2	24.0		ENE			4		2			0.039	1.0	Clear	Jacques.
Sfax			29.98	761.5	82.4	28 0		E			2		9			Inap.	Inap.	Hidden	Husson.
Saida			29.90	759.4	78.8	26.0		NNW			2		2			0	0	Clear	Millot.
Tebessa			29.94	760.5	82.9	28.3		NW			5		2			0	0	Clear	Bourgeois.
Geriville			29.88	758.9	81.3	27.4	18	SSW			3		3			0	0	Fair	Lemaillot.
Laghouat			29.95	760.6	88.7	31.5	35	W			4		2			0	0	Clear	François.
Biskra			29.95	760.6	92.3	33.5	40	SSE			2		8			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.20	741.7	29.73	755.2	69.4	20.8	47	SW			5		6			0.091	2.3		Prof. Ivan Stozir
Cracow, I. R. Observatory	28.88	733.6	29.63	752.7	60.1	15.6	62	W					10			0.016	0.4		Dr. Wierzbiski.
Eperies	28.82	731.9	29.67	753.5	63.9	17.7	45	S			4		9cks		N	0.386	9.80		Julius Mikolik.
Gratz	28.46	722.9	29.69	754.2	57.0	13.9	89	SW			1		7			0.748	19.0		Andreas Rospini.
Hermannstadt	28.41	721.6	29.79	756.7	62.6	17.0	60	NNW			1		2			0.035	0.90		Prof. Reissenberger.
Kremsmünster	28.24	717.4	29.55	750.5	59.9	15.5	56	Calm			0		2			0.496	12.6		Prof. C. Wagner.
Lemberg	28.68	728.5	29.65	753.0	59.0	15.0	67	NW			2		3			0.220	5.6		Dr. T. Stanecki.
Pola	29.63	752.7	29.74	755.4	73.4	23.0	57	SSW			4		4ks			0.020	0.50		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.48	748.8	29.75	755.7	65.1	18.4	67	S			3		6			0	0		Karl Stancel.
Trieste	29.04	752.8	29.74	755.4	69.8	21.0	67	SW			1		2			0.110	2.8		P. Busin.
Vienna	28.92	734.5	29.59	751.6	66.2	19.0	73	SE			1		5			0.020	0.5		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.: Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.20	716.3	29.71	754.6	48.7	9.3	72	WNW			1		10			0	0		
Brussels	29.49	749.1	29.69	754.2	51.3	10.7	78	NNW			4		4		NW	0.089	2.25		Royal Observatory.
Furnes																			
Maeseyck	29.54	750.2	29.67	753.5	57.4	14.1	70	SW			4		7			0.087	2.2		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.86	758.4	29.96	761.0	49.6	9.8		NNW	19	8.5			4			0.060	1.52	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	29.96	761.0	29.97	761.2	57	13.9		NW			3		7					D. clouds	William McNeil.
Armagh, Observatory			30.04	763.0	51.8	11.0							3					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.91	759.7	52.2	11.2		NNW	15	6.7			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.01	762.2	52.9	11.6		N			1		8					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.45	748.0	29.84	757.9	52.1	11.2		NE			4		6			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)			29.82	757.4	77.0	25.0		NE			6		9						Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.80	756.9	54.0	12.2		N			1		7					Threatening	H. Todd. [H.C
Cardington			29.82	757.4	53.0	11.7		NW			1		5					D. clouds	John McLaren.
Chatham, School M. E.	29.76	755.9	29.89	759.2	52.2	11.2		NW			2		5					Hazy	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.43	722.1	29.90	759.4	53.0	11.7		N			3		4					D. clouds	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.96	761.0	29.99	761.7	52	11.1		NE			3		0					Blue sky	J. Mac Gowan.
Dover	29.73	755.1	29.76	755.9	54	12.2		N			4		5					Hail-shower	J. Costello.
Eccles, (near Manchester)			29.86	758.4	58.0	14.4		NW	3.4	1.5			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.66	753.4	29.89	759.2	56.0	13.3		NNE			3		9					Overcast	The Staff.
Fort Napier, (Natal)	27.82	706.6	30.03	762.7	67.2	19.6		E			3		0					Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.91	759.7	86	30.0		W			0		3					D. clouds	
Galway, Queen's College			29.98	761.5	57	13.9		NE			1		4					D. clouds	R. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.84	757.9	29.87	758.7	75.2	24.0		W			6		7					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.76	755.9	29.97	761.2	53.0	11.7		NNE			3		7					D. clouds	D. G. Maclean.
Great Yarmouth	29.73	755.1	29.74	755.4	53	11.7		NNW			3		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.63	752.6	29.80	756.9	56.0	13.3		N			2		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.61	752.1	29.83	757.7	55.5	13.1		NNE			3		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.98	761.5	59	15.0		N			2		3			0	0	D. clouds	M. P. Moyle.
Holyhead	29.91	759.7	29.95	760.7	52	11.1		N			5		3					D. clouds	John Tilston.
Jersey	29.55	750.6	29.84	757.9	55.0	12.8		NE			4		4					D. clouds	J. Fisher.
Kew, Observatory			29.82	757.4	52.4	11.3		N	11	4.9			8k					Threatening	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			29.84	757.9	54.8	12.7		NE			2		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.88	758.9	29.96	761.0	82.2	27.9		SE			1		6					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	29.90	759.4	29.99	761.7	53	11.7		N			4		5					⅘ clouded	W. D. Penny.
Nassau, (Bahamas)			29.94	760.5	86.5	30.3		SW			1		7					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.69	754.1	29.88	758.9	55.0	12.8		NNW			3		5ck		NW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.33	745.0	29.85	758.2	52.0	11.1		NNE			3		4					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.84	757.9	52	11.1		NW			1		8					Overcast	F. Lucas
Plymouth	29.79	756.7	29.87	758.7	55.8	13.2		NE			2		6					D. clouds	John Merrifield.
Roche's Point	29.92	760.0	29.96	761.0															W. Kennedy.
Saint Ann's Head	29.76	755.9	29.92	760.0	48	8.9		NNE			2		4						John C. Walker.
Sandwick Manse, (Orkneys)			30.03	762.7	47.8	8.8		N	24	10.7			3					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.86	758.4	82.4	28.0		SW			1		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.63	752.6	29.87	758.7	52.9	11.6		NW			2		4			0.056	1.42	Blue sky	W. F. Cooper.
Silloth Rectory	29.89	759.2	29.92	760.0	57.3	14.1	58	NE			2		4			0.050	1.27	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					51.0	10.6		N			4		9					D. clouds	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			30.04	763.0	48	8.9		NE			1		10					Gloomy	John Smith.
Stratfield Turgiss	29.52	749.8	29.74	755.4	54.6	12.6		N			2		6					Squally	Rev. C. H. Griffith, F.M.S.
Thurso			30.00	762.0	49	9.4		NNE			6		7					Showery	John Trotter.
Truro, Royal Institution			29.87	758.7	60	15.6		N			5		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.00	762.0	57.2	14.0		NE	19	8.5			7					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		NE			3		0						Henry Mercer.
Cape Good Hope, Obs'y	29.78	756.4	29.82	757.4	69.0	20.6	63	W	23	10.3		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.98	761.5	52.5	11.4	88	SW			2		10kn			0.25	6.3	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.58	751.3	51.8	11.0		N			2		6k			0.05	1.3	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.11	764.8	75.0	23.9	66	ENE	19.0	8.5		0	4		ENE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.80	756.9	29.89	759.2	55.0	12.8	70	NE	8	3.6			6		N	0.24	6.1	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.09	764.3	52	11.1		NE			6	5	5	N		0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.91	759.7	46	7.8		N			6	5	4	N		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria				Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine. N. 51° 24′, W. 34° 43′	4	SE	D. clouds	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller. N. 38° 45′, W. 70° 40′	4	ENE	Overcast	Capt. Alex. Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.22	666.0			68.9	20.5	92	SE			1		4c;ck			0.6	15.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.56	750.9	29.61	752.1	46.0	7.8	68	NNW			2		4						
Fanöe	29.63	752.6	29.65	753.1	52.0	11.1	49	N			4		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.14	765.6	30.19	766.7	50.2	10.1	94	W			4		10						
Thorshavn, (Faröe)	30.10	764.4	30.13	765.3	47.1	8.4	60	N			2		10						
Vestervig	29.52	749.7	29.69	754.0	47.1	8.4	79	NE			2		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.28	743.6	29.83	757.6	60.8	16	55	NE			1		5		W	0.020	0.5	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.72	754.8	29.80	756.8	73.0	22.8	42	ENE			1		5		WSW	0	0	Cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.18	741.1	29.74	755.4	52.7	11.5	75	NE			2		8		NE	0.378	9.6	Raining	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.49	749.0	29.77	756.2	54.5	12.5	57	N			3		8		N	0.167	4.25	Very cloudy	Normal School.
Besançon	28.84	732.6	29.72	755.0	57.2	14	84	SW			3		8		W	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	28.91	734.2	29.82	757.5	59.4	15.2	78	SW			4		10n		SW	0	0	Covered	Normal School.
Bourges, Normal School	29.20	741.7	29.76	755.8	49.1	9.5	95	NE			4		10		NE	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.55	750.5	29.76	756.0	56.3	13.5	66	NE			4		10		NE	0.020	0.5		The Staff.
Carcassonne, Normal School	29.34	745.2	29.74	755.5	69.8	21	61	E			2		10		E	0	0	Covered	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.41	747.0	29.72	755.0	54.3	12.4	76	N			2		10n		N	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.36	720.3	29.67	753.5	66.7	19.3	46	W			1		8		W	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	28.89	733.7	29.77	756.1	49.3	9.6	79	NW			2		10		NW	0.83	21.	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.68	728.4	29.82	757.4	76.3	24.6	38	E			1		8		SW	0	0	¾ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.56	750.8	29.77	756.2	59.0	15	75	NW			2		8		NW	0.055	1.4	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.48	748.9	29.79	756.7	55.2	12.9	59	NE			2		5		NE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.71	729.2	29.61	752.2	58.1	14.5	80	S			1		10		WSW	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	29.74	755.4	29.84	757.9	60.1	15.6	52	NE			3		8		NE	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	28.99	736.4	29.66	753.4	61.2	16.2	77	S			2		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.58	726.0	29.62	752.3	52.3	11.3	97	NW			2		10		NW	0.264	6.7	Covered	Normal School.
Nismes, Normal School	29.76	755.8	29.95	760.7	90.5	32.5	29	N			1		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.52	749.8	29.76	755.8	53.4	11.9	61	NW			1		9			0.143	3.63	Almost cov'd	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.72	755.0	29.76	755.8	65.8	18.8	64	NW			1		10		NW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.69	754.2	29.78	756.4	56.8	13.8	49	NW			3		2		N	0.177	4.5	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	28.71	729.1	29.75	755.6	68.0	20	74	W			1		8		E	0	0	Very cloudy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.71	754.6	29.74	755.3	80.6	27										2.20	56.		L'Abbé Marchésl.
Marseilles, Observatory			29.74	755.4	72.0	22.2	57	S			0-1		9			0.138	3.50	Rainy	The Staff.
Mont-Louis	24.72	627.8	30.03	762.8	52.7	11.5	69	WSW	9.3	4.17			10		SSW	0.094	2.4		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.48	748.7	29.75	755.7	53.2	11.8	68	WNW			2		9		WNW	0.169	4.3		Marié Davy, Director.
Perpignan			29.74	755.4	64.8	18.2	70	E	3.7	1.67			10		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.15	537.1			39.2	4.0		SW			6		10					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.38	568.4			42.8	6.0		SW			3		10			0.303	7.7	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.59	751.6	29.76	755.8	54.9	12.7	62	NW			1		9		NW	0.197	5.0		E. Renou.
Toulouse, Observatory	29.05	737.8	29.76	756.0	64.4	18.0	68	ESE			1		9			0.150	3.8	Rainy	The Staff.
Tours	29.57	751.1	29.77	756.1	55.0	12.8	73	NNE			1		10		NNE	0.051	1.3		C. Marquet.
Versailles, (near Paris)			29.76	755.8	56.5	13.6	57	N			1		8			0.205	5.20	Very cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.93	760.1	29.95	760.7	73.6	23.1	94	SE	6.5	2.9			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 9:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.47	748.5	29.64	752.8	51.6	10.9	59	N			1		6			0.075	1.91		Prof. Arndt.
Breslau	29.12	739.7	29.65	753.0	49.6	9.8	75	NW			1		10			0.085	2.16	Raining	Royal University Obs'y.
Carlsruhe	29.24	742.7	29.67	753.6	46.9	8.3	88	SW			1		10			1.567	39.8	Heavy rain.	Albert Senz.
Cassel	29.13	739.8	29.72	755.0	50.7	10.4	75	SE			3		7	SW		0.092	2.33		Dr. H. Möhl.
Crefeld	29.47	748.5	29.63	752.6	58.6	14.8	68	NW			2		6k			0.31	8.		Director Lose.
Emden	29.65	753.2	29.69	754.1	54.7	12.6	55	ENE			3		2			0.122	3.1		Prof. Prestel.
Frankfort on the Main	29.32	744.6	29.68	753.8	51.4	10.8	65	NNW			1		8			0.417	10.6	Raining	Physical Society.
Friedrichshafen	28.24	717.3	29.64	752.8	60.8	16.0	70	WNW			5		10	NW		0.673	17.1	Raining	M. Wilhelm.
Hamburg	29.56	750.9	29.63	752.7	52.0	11.1	58	NW			2		5k	NW		0.012	0.3	Fair	Captain F. Hegemann.
Kiel	29.62	752.4	29.64	752.8	50.4	10.2	63	N			1		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.44	747.8	29.51	749.5	51.8	11.0	58	SW			2								Prof. E. Luther.
Köslin			29.60	751.8	47.3	8.5							4					Hailing	H. Müller.
Leipsic, Observatory	29.23	742.5	29.57	751.1	50.2	10.1	75	SW			1		9	W		0.024	0.6	Rain and fog	Prof. Bruhns.
Memel, Naval School	29.45	748.0	29.50	749.2	49.1	9.5	69	W			4		5k	W				Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.54	750.2	29.55	750.6	50.5	10.3	65	N			2		9			0.004	0.1	Rain & graupel.	A. Lothes.
Posen	29.38	746.2	29.67	753.6	53.8	12.1	61	W			3-4		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.17	740.8	29.72	754.9	45.9	7.7	99	NE			2		10	W		0.036	0.91	Raining	Dr. Schur.
Stuttgart	28.71	729.1	29.65	753.2	46.9	8.3	89	NW			1		10	W		0.496	12.6	Heavy rain	Prof. Schoder.
Treves, (Trier)	29.06	738.0	29.57	751.1	53.2	11.8	68	WSW			4		10			0.181	4.60		Prof. Flesch.
Weissenburg, (Bavaria)	28.11	714.0	29.61	752.2	46.9	8.3	71	NNW			3		10	NW		0.138	3.5	Raining	Dr. Von Bebber.
Wustrow, Naval School	29.64	752.8	29.68	753.9	49.3	9.6	68	N			2		5						E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.60	751.7	29.97	761.2	85.5	29.7		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.71	754.6	29.76	755.9	84.2	29.0	73	WSW	33.0?	14.8?			2		WSW	0	0	D. clouds	
Deesa																			
Bombay	29.76	755.8	29.79	756.8	83.5	28.6	86	NW	10.0	4.5			10		W	0	0	Misty	
Poona	27.75	704.8	29.74	755.4	78.8	26.0	80	W					9	NW;W	NW	0.01	0.3	Thunder	
Lahore	28.92	734.4	29.63	752.6	95.2	35.1	38	S	0.9	0.4			0			0	0	Blue sky	
Belgaum	27.27	692.8	29.83	757.6	72.3	22.4	93	W	6.0	2.7			10		NE	0.82	20.8	Overcast	
Bangalore																			
Roorkee	28.74	730.0	29.61	752.0	95.9	35.5	23	NW	3.4	1.5						0	0		
Agra	29.11	739.4	29.65	753.2	98.7	37.1	23	W								0	0		
Trichinopoly																			
Nagpur	28.69	728.7	29.71	754.7	89.5	31.9	47	Calm	1.6	0.7			8			0	0	D. clouds	
Madras																			
Lucknow	29.29	718.5	29.65	753.1	96.1	35.6	23	NW	3.3	1.5			3		E	0	0	D. clouds	
Allahabad	29.36	745.6	29.66	753.4	88.6	31.4	53	Calm	2.3	1.0			3		E	0	0	D. clouds	
Patna	29.50	749.4	29.68	753.9	89.0	31.7	73	E	1.7	0.8			6	SE	E	0	0	D. clouds	
Hazaribagh	27.73	704.4	29.71	754.7	84.3	29.1	69	WNW	5.8	2.6			8			0	0	Misty	
Cuttack	29.65	753.1	29.73	755.1	86.8	30.4	69	S	2.2	1.0			3			0.07	1.8	D. clouds	
Calcutta (Alipore)	29.74	755.5	29.76	756.0	84.7	29.3	79	SW	3.0	1.3			7			0	0	D. clouds	
Goalpara	29.37	745.9	29.76	755.8	76.3	24.6	91	Calm	0.9	0.4			9			0.16	4.1	D. clouds	
Chittagong	29.71	754.7	29.80	757.0	81.1	27.3	86	Calm	0.4	0.2			4			0	0	D. clouds	
Sibsagar	29.48	748.7	29.81	757.2	79.5	26.4	92	WNW	3.2	1.4			10	W	W	0.01	0.3	D. clouds	
Rangoon																			
Jubbulpore	28.40	721.3	29.74	755.5	86.0	30.0	64	NW	1.9	0.8			8	NW	NE	0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.97	558.1	29.78	756.3	42.3	5.7	93	NW			6		8	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.94	557.2	29.77	756.2	37.8	3.2		WNW			8		8	NE		0	0		Signora Ernesta Manfredi.
Udine	29.30	744.3	29.71	754.7	64.6	18.1	74	SE	0.7	0.3			9			0.547	13.9		Prof. Giovanni Clodig.
Padua	29.58	751.2	29.69	754.0	68.0	20.0	72	N	1.3	0.6			9			0.012	0.3		Prof. Dott. Lorenzoni.
Vicenza	29.51	749.5	29.70	754.4	66.0	18.9	71	E	0.7	0.3			4	W		0	0		Conte Alm. Da Schio.
Verona	29.50	749.3	29.72	754.9	72.5	22.5	48	NE			2		10			0	0		Dott. B. Bertoncelli.
Bergamo	28.39	721.1	29.67	753.6	66.6	19.2	56	N			1		8			0	0		Prof. Trionfini Carlo.
Domodossola	28.65	727.8	29.67	753.7	62.4	16.9	11	S			6		10			0	0		Prof. Giuseppe Calza.
Milan	29.17	740.9	29.69	754.0	70.3	21.3	63	ENE			2		8	NE		0.016	0.4		Ab. Gio. Capelli.
Pavia	29.32	744.7	29.67	753.5	71.2	21.8	52	E			4		7	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.77	730.8	29.68	753.8	68.0	20.0	54	SSE	1.3	0.6			8	SW		0	0		Prof. P. F. Denza.
Mondovi	27.78	705.7	29.69	754.0	66.0	18.9	50	NW			2		1			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.49	749.1	29.71	754.6	71.4	21.9	59	SW			8		5	SW		0	0		Prof. L. Vassallo.
Genoa	29.56	750.8	29.73	755.1	72.7	22.6	47	SW	12.5	5.6			6	S		0.209	5.3		Prof. G. M. Garibaldi
Piacenza	29.41	747.1	29.67	753.6	71.6	22.0	47	NE	3.1	1.4			5	SW		0	0		Dott. G. Manzi.
Parma	29.36	745.8	29.67	753.7	75.2	24.0	43	NW			8		2			0	0		Prof. P. Pigorini.
Florence	29.54	750.2	29.79	756.7	74.7	23.7	40	SW			6		7	WSW		0.130	3.3		Cav. F. Meucci.
Leghorn	29.70	754.3	29.78	756.4	75.9	24.4	59	S	7.4	3.3			7			0.181	4.6		Prof. P. Monte.
Siena	28.71	729.1	29.83	757.6	73.8	23.2	48	SW	3.8	1.7			9	N		0.772	19.6		Prof. L. Toscani.
Urbino	28.24	717.3	29.79	756.6	73.9	23.3	55	SW			2		6			0	0		Prof. P. Serpieri.
Pesaro	29.69	754.0	29.73	755.2	75.2	24.0	64	S	0	0			10	S		0	0		Prof. Luigi Guidi.
Ancona	29.67	753.5	29.77	756.2	73.4	23.0	59	SSE			4		10	S		0	0		Prof. F. DeRosis.
Grosseto	29.76	756.0	29.87	758.8	74.1	23.4	62	SSW			4		6	S		0	0		Avv. P. Ponticelli.
Rome	29.72	755.0	29.90	759.4	75.7	24.3	60	S	13.0	5.8			10			0.028	0.7		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.77	756.2	29.97	761.2	78.6	25.9	47	S			4		7	WSW		0.965	24.5		Prof. L. Palmieri.
Lecce	29.65	753.0	29.89	759.3	80.1	26.7	38	S	16.8	7.5			4	S		0	0		Prof. C. DeGiorgi.
Cosenza	29.15	740.5	30.02	762.6	73.9	23.3	58	NNW	1.8	0.8			3	WSW		0	0		Prof. F. D. Conti.
Cagliari	29.60	751.8	29.78	756.5	81.5	27.5	64	S			2		6	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.92	760.0	29.97	761.2	78.8	26.0	57	SE			2		4	E		0	0		Prof. F. Caflero.
Palermo	29.66	753.3	29.91	759.6	79.9	26.6	56	E	4.3	1.9			2			0	0		Prof. G. Cacciatore.
Caltanissetta	27.94	709.6	29.81	757.1	75.0	23.9	54	SSW			4		1			0	0		Prof. A. Pagani.
Syracuse	29.90	759.4	29.98	761.5	78.8	26.0	52	SE			2		4	WSW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.44	747.7	29.99	761.8	74.5	23.6	85	SW	3.8	1.7			3	SW		1.354	34.4		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokiyo, Japan.

Tokiyo (Yeddo)																			The Observatory.
Tokiyo (Yeddo) University.	30.04	763.0	30.14	765.5	65.7	18.7	92	Calm	0	0						0	0	Clear.	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.17	588.4	30.22	767.6	49.6	9.8	79	NW	3.4	1.54		0	8k		NE	0	0	Foggy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Cordoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.72	754.9	29.72	754.9	54.0	12.2		NNW			4					0.098	2.5		
Groningen	29.60	751.8	29.65	753.2	53.8	12.1		NNE			2					0.055	1.4		
Helder	29.67	753.7	29.67	753.7	53.6	12.0		N			4					0.122	3.1		
Utrecht	29.61	752.2	29.66	753.4	55.4	13.0	60	NW			2		5			0.138	3.5	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.68	753.8	29.73	755.2	50.4	10.2	58	W	2.2	1.0			3			0	0		
Brône	29.70	754.3	29.74	755.3	44.6	7.0	71	NE	9	4			5			0	0		
Christiania	29.54	750.2	29.68	753.9	48.9	9.4	86	N	7	3			7			0.012	0.3		
Tromsö	29.66	753.3	29.70	754.4	44.6	7.0	63	SW	7	3			5			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.82	757.3	30.00	762.1	67.6	19.8	79	NNE	4.3	1.9			8			0	0		
Campo Major	28.79	731.3	29.81	757.1	65.3	18.5	81	SSW	16.1	7.2			10	SSW		0.291	7.4	Raining	Dr. J. A. Sampaio
Funchal, (Madeira)	29.91	759.6	29.99	761.8	75.4	24.1	52	W	9.8	4.4			0			0	0		Dr. A. M. R. dos Santos.
Lisbon, Observatory	29.34	745.3	29.70	754.3	68.7	20.4	79	SW	28.6	12.8			4			0.512	13.0		Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	29.91	759.7	29.98	761.5	70.5	21.4	62	N	4.9	2.2			3			0.028	0.7		The Staff.

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Direction from—		
S. S. India Ponta Delgada.				30.10?	764.4?	70.7	21.5	66	Calm			0		10	N	N	2	Overcast	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.19	741.5	29.61	752.2	51.4	10.8	75	SW	11	5			9						Astronomical Obs.
Wilna	29.15	740.4	29.57	751.0	52.0	11.1	66	WSW	4	2			8						Astronomical Obs.
Dorpat	29.24	742.6	29.48	748.7	48.9	9.4	52	SW	7	3			3						Physical Cabinet.
St. Petersburg	29.51	749.6	29.53	750.0	45.1	7.3	85	SSE	11	5			10						Central Physical Obs.
Kuopio	29.25	743.0	29.58	751.2	40.1	4.5	96	E	13	6			10					Raining	Ch. Forsten.
Kieff	29.01	736.8	29.63	752.5	60.1	15.6	55	W	9	4			5						Physical Cabinet.
Nikolaiev	29.67	753.6	29.74	755.4	62.2	16.8	76	Calm	0	0			2						Kurdakof.
Kertch	29.70	754.4	29.72	754.9	74.5	23.6	86	WNW	7	3			10						Lagorio.
Moscow	29.13	740.0	29.68	753.9	50.7	10.4	88	SSE	7	3			10					Light rain	Meteorological Obs.
Lugan	29.37	745.9	29.57	751.0	65.5	18.6	86	S	18	8			9			Blank	Blank		Meteorological Obs.
Archangel	29.58	751.2	29.60	751.7	38.1	3.4	83	NW	18	8			10						Ogorodnikof.
Tiflis	28.55	725.1	29.89	759.1	81.7	27.6	44	SE	4	2			2						Physical Observatory.
Astrakhan	30.05	763.2	29.97	761.1	67.6	19.8	57	SSE	13	6			3						Sobastianof.
Kasan	29.63	752.7	29.91	759.6	53.4	11.9	69	WSW	7	3			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.02	737.2	29.97	761.3	48.2	9.0	50	W	22	10			6						Meteorological Obs.
Nukuss	29.74	755.4	29.97	761.1	77.7	25.4	47	NE	4	2			0						
Kassly																			Bobrof.
Tashkend	28.38	720.9	30.04	763.0	69.1	20.6	75	Calm	0	0			3						Michelson.
Barnaul	29.55	750.5	30.06	763.5	59.2	15.1	42	NW	0	0			0						Meteorological Obs.
Yeniseisk	29.91	759.6	30.05	763.3	43.0	6.1	87	W	2	1			8						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.70	754.3	29.84	757.9	64.0	17.8	86	SSW	13	6			9						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					45.0	7.2	79	Calm	0	0			10						

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.60	701.1			67.3	19.6	52	SW	26.8	12.00		0	9			0.035	0.9	Almost cov'd	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.88	758.9	29.96	761.0	77.8	25.4	90	Calm	0	0		4c	1k	N	SW	2.012	51.1	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.81	757.3	29.91	759.7	73.2	22.9	74	SSW	20.6	9.2		0	6		SW	0.630	16.0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.87	758.8	84.6	29.2	84	E				4cs	1k	SE	SE	0.581	14.75	D. clouds	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.75	755.7	29.79	756.7	37.8	3.2	56	NE			4		10			0	0		
Umea	29.65	753.0	29.70	754.3	39.0	3.9	85	NE			2		10			0.213	5.4		
Hernosand	29.62	752.4	29.67	753.7	44.6	7.0	69	NE			7		7			0.024	0.6		
Stockholm	29.34	745.3	29.52	749.8	40.1	4.5	89	N			6		7			0.252	6.4		
Wisby	29.42	747.2	29.48	748.7	46.4	8.0	83	NNE			6		10			0.283	7.2		
Sub-Series.																			
Upsala	29.48	748.8	29.56	750.7	41.7	5.4	82	N	12.8	5.7			8		N	0.116	2.94		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.30	718.7	29.69	754.1	65.5	18.6	48	SSW			2		10			0	0	Covered	The Observatory.
Zurich	28.05	712.5	29.67	753.7	59.2	15.1	76	W			1		10			0.449	11.4	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —8.2 mm; Thermometer, +1.3 cent.; Relative Humidity, —17 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.91	759.7	82.8	28.2	52	NW	4	2.0			6		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.98	761.6	82.4	28		SE			1		0						B. Stefanides.
Valona			30.11	764.8	80.6	27.0		SW			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			29.80	757.0	78.8	26.0		NW			5		0						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.91	759.7	30.02	762.6	85.1	29.5	70	N			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.88	758.9	29.95	760.7	48.8	9.3	92	Calm	0	0			10			0.30	7.6		Hon. J. Ferguson.
Brockville, Ontario			30.05	763.3	48	8.9		N	5	2.2		0	0			0.20	5.1	Clear	W. R. Bigg.
*Chatham, N. B.			29.94	760.5	51	10.6	96	NW	1	0.4			10s		NW	0.17	4.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.99	761.7	57	13.9	89	S	4	1.8			10ks		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.78	756.4	29.97	761.2	48.0	8.9	92	NW			1		10s			0.426	10.82	Unsettled	James Smith, M. A.
Dalhousie, N. B.	29.88	758.9	29.92	760.0	46.9	8.3	96	E			1							Raining	H. A. Johnson.
Esquimault, B. C.	29.98	761.5	30.03	762.7	42.3	5.7	100	N					5cs			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			29.93	760.2	45	7.2	98	NE	19	8.5			10n			0.20	5.1	Light rain	J. McWilliams.
Fredericton, N. B.	29.90	759.4	29.97	761.2	50.9	10.5	93	SE	6	2.7			10n			0.11	2.8	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.70	754.4	51	10.6	96	S	11	4.9		0	0					Clear	James Stewart.
Goderich, Ontario	29.38	746.2	30.17	766.3	53.4	11.9	79	NW			2	7ck	0	NW		0	0	Fair	H. J. Strang, M. A.
Granton, Ontario	29.05	737.9	30.16	766.1	46	7.8	92	N			1	0	0			0.06	1.5	Foggy	James Grant.
*Halifax, N. S.	29.83	757.7	29.97	761.2	53	11.7	93	W	1	0.4			10n			0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.80	756.9	30.17	766.3	53.2	11.8	71	NE			3	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.08	764.0	30.10	764.5	54	12.2	70	W			3	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.72	754.9	30.10	764.5	50	10.0	72	N	9	4.0		0	0			0.18	4.6	Clear	S. Woods, M. A
*Montreal, Quebec	29.75	755.6	29.95	760.7	49	9.4	85	NW	8	3.6			Haze			0.31	7.9	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.50	749.3	30.20	767.1	46	7.8	92	NE	7	3.1		0	0			0.04	1.0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.37	746.0	30.12	765.0	47.7	8.7	77	N			2	0	0			0.06	1.5	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.44	747.8	30.14	765.5	47	8.3	92	N	7	3.1		0	0			0.16	4.1	Clear	H. Morgan.
Port Hastings, N. S.	29.97	761.2	30.02	762.5	54.6	12.6		Calm	0	0						Inap.	Inap.	Fine	Peter Grant
Port Stanley, Ontario	29.47	748.5	30.12	765.0	47	8.3	95	N	3	1.3		0	0			0.03	0.8	Clear	M. Payne.
*Quebec, Quebec	29.68	751.3	29.91	759.7	51	10.6	93	NE	16	7.2			10n		NE	0.13	3.3	Light rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.70	754.4	30.17	766.3	42	5.6	87	NW	8	3.6		0	0			0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.81	757.2	29.98	761.5	53	11.7	86	Calm	0	0			9s			0.06	1.5		G. Murdock, C. E.
*Saugeen, Ontario	29.44	747.8	30.14	765.5	54	12.2	86	NE	4	1.8		5c	0	N		0.15	3.8	Fair	K. Stewart.
Stayner, Ontario			30.15	765.8	47	8.3	70	Calm	0	0		8k	0	N		0.28	7.1	Cloudy	R. J. Cole.
Stratford, Ontario	28.86	733.0	30.16	766.1	42.1	5.6	98	Calm	0	0			Fog			0.051	1.30	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B.	30.02	762.5	30.05	763.3	55	12.8	88	S	1	0.4		10cs	Haze			0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.79	756.7	30.17	766.3	51	10.6	69	N	6	2.7		5ck	0	W		Inap.	Inap.	Fair	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					56.0	13.3	81	W				0	0			0	0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.68	753.9	29.90	759.4	53	11.7	79	Calm	0	0			10ks		Calm	0	0	Cloudy	
Alpena, Michigan	29.55	750.6	30.21	767.3	45	7.2	76	NW	4	1.8		0	0			0.25	6.3	Clear	
Atlantic City, New Jersey	29.91	759.7	29.92	760.0	60	15.6	82	NW	8	3.6		2c	0	SW		0	0	Fair	
Augusta, Georgia	29.71	754.6	29.89	759.2	64	17.8	91	NE	4	1.8			10s		NE	0.14	3.6	Cloudy	
Baltimore, Maryland	29.92	760.0	29.97	761.2	60	15.6	76	NW	4	1.8		Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	29.89	759.2	29.91	759.7	61	16.1	82	NW	10	4.5		2c	0	SW		0	0	Clear	
Bismarck, Dakota	27.86	707.6	29.46	748.3	56	13.3	68	E	5	2.2		1c	Sm'e	Calm	Calm	0	0	Clear	
Boise City, Idaho	27.06	687.3	29.63	752.6	48	8.9	70	Calm	0	0		5k	0	Calm		0	0	Fair	
Boston, Massachusetts	29.72	754.9	29.87	758.7	60	15.6	70	Calm	0	0		2cs;k	Sm'e	Calm		0	0	Fair	
Brackettville, Texas	28.92	734.6	29.93	760.2	67	19.4	74	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.79	731.3	29.76	755.9	55	12.8	68	SE	21	9.4		0	0			0	0	Clear	
Brownsville, Texas	30.00	762.0	30.07	763.8	63	17.2	62	NW	5	2.2		0	0			0	0	Clear	
Buffalo, New York	29.39	746.5	30.10	764.5	52	11.1	79	N	9	4.0		1k	0	N		Inap.	Inap.	Clear	
Burlington, Vermont	29.66	753.4	29.92	760.0	50	10.0	100	NW	11	4.9			10n		NW	0.41	10.4	Light rain	
Cairo, Illinois	29.69	754.1	30.08	764.0	60	15.6	88	Calm	0	0		0	Fog		Calm	0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.72	678.7	30.21	767.3	63	17.2	62	Calm				0	0			0	0	Clear	
Campo, California	27.34	694.4	29.91	759.7	38	3.3	83	NE	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.76	755.9	29.77	756.1	68	20.0	90	NE	27	12.1		2k	8s	SW	NE	1.78	45.2	Cloudy	
Cape Henry, Virginia	29.87	758.7	29.90	759.4	65	18.3	94	NE	18	8.0			10s		NE	1.27	32.3	Cloudy	
Cape Lookout, N. Carolina	29.83	757.7	29.84	757.9	71	21.7	85	NE	26	11.6			10ks		NE; SW	0.70	17.8	Cloudy	
Cape May, New Jersey	29.90	759.4	29.93	760.2	63	17.2	72	N	16	7.2		2c	0	SW		0.18	4.6	Fair	
Charleston, South Carolina	29.83	757.7	29.89	759.2	68	20.0	94	NE	8	3.6			10n		Calm	0.41	10.4	Light rain	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	56	13.3	26	NW	8	3.6			10s		W	0	0	Cloudy	
Chicago, Illinois	29.46	748.3	30.14	765.5	60	15.6	70	E	8	3.6		5k	0	E		0	0	Fair	
Cincinnati, Ohio	29.36	745.7	29.89	759.2	59	15.0	81	N	8	3.6		0	Fog		N	0	0	Clear	
Cleveland, Ohio	29.40	746.7	30.12	765.0	60	15.6	62	N	14	6.3		8k	0	N		0.03	0.8	Fair	
Concho, Texas	28.18	715.8	29.88	758.9	50	10.0	78	NW	6	2.7		0				0	0	Clear	
Corsicana, Texas	29.61	752.1	30.08	764.0	57	13.9	75	N	6	2.7		0	0			0	0	Clear	
Davenport, Iowa	29.54	750.3	30.18	766.6	53	11.7	86	Calm	0	0		0	0			0	0	Clear	
Denison, Texas	29.31	744.5	30.10	764.5	62	16.7	77	NW	1	0.4		0	0			0	0	Clear	
Denver, Colorado	24.72	627.9	29.94	760.5	60	15.6	19	SE	5	2.2		0	5s		Calm	0	0	Fair	
Detroit, Michigan	29.44	747.8	30.11	764.8	50	10.0	86	N	7	3.1		0	Sm'e		Calm	0.05	1.3	Clear	
Dodge City, Kansas	27.40	696.0	29.64	752.8	58	14.4	54	S	9	4.0		0	0			0	0	Clear	
Dubuque, Iowa	29.46	748.3	30.17	766.3	49	9.4	93	SE	1	0.4			Fog		Calm	0	0	Foggy	
Duluth, Minnesota	29.41	747.0	30.09	764.3	49	9.4	93	E	3	1.3		Haze	2s	Calm	Calm	0	0	Hazy	
Eagle Pass, Texas	29.30	744.2	30.05	763.3	54	12.2	73	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.85	758.2	29.92	760.0	54	12.2	86	S	1	0.4		5c	5s	NW	Calm	0	0	Cloudy	
Erie, Pennsylvania	29.37	746.0	30.08	764.0	57	13.9	75	N	20	8.9		5k	0	N		0.07	1.8	Fair	
Escanaba, Michigan	29.57	751.1	30.24	768.1	42	5.6	91	Calm	0	0			Fog		Calm	0	0	Foggy	
Florence, Arizona	28.27	718.0	29.87	758.7	84	28.9	25	W				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.14	613.1	30.14	765.5	54	12.2	26	NE	6	2.7		0	0			0	0	Clear	
Fort Craig, New Mexico	25.60	650.2			54	12.2	25	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.53	750.0	30.07	763.8	53	11.7	79	E	1	0.4		0	0			0	0	Clear	
Fort Griffin, Texas	28.83	732.3	30.12	765.0	50	10.0	78	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.87	733.3	29.97	761.2	61	16.1	77	Calm	0	0		0	0			0	0	Clear	
Fort Sully, Dakota	27.99	710.9	29.58	751.3	59	15.0	64	SE	2	0.9		0	0			0	0	Clear	
Galveston, Texas	30.01	762.2	30.05	763.3	68	20.0	74	N	8	3.6		0	0			0	0	Clear	
Grand Haven, Michigan	29.53	750.0	30.19	766.8	49	9.4	85	NE	4	1.8		0	Sm'e		Calm	0	0	Clear	
Indianapolis, Indiana	29.32	744.7	30.10	764.5	52	11.1	93	NE	11	4.9			10s		NE	0	0	Cloudy	
Indianola, Texas	30.06	763.5	30.08	764.0	69	20.6	65	NE	6	2.7		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.76	755.9	29.79	756.7	77	25.0	77	SE	8	3.6		2k	5ks	SW	SW	0	0	Threatening	
Keokuk, Iowa	29.49	749.0	30.10	764.5	57	13.9	81	NE	6	2.7		0	0			0	0	Clear	
Key West, Florida	29.89	759.2	29.92	760.0	80.0	26.7	82	SW	6	2.7			5s		SW	0.43	10.9	Cloudy	
Kittyhawk, North Carolina	29.87	758.7	29.89	759.2	67	19.4	100	NE	28	12.5			10ks		NE	0.67	17.0	Cloudy	
Knoxville, Tennessee	29.00	736.6	29.99	761.7	59	15.0	82	NE	5	2.2		0	0			0	0	Clear	
La Crosse, Wisconsin	29.39	746.5	30.13	765.3	54	12.2	79	S	6	2.7		0	0			0	0	Clear	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	62	16.7	36	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					59	15.0	48	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.23	742.4	30.07	763.8	52	11.1	79	Calm	0	0		0	Fog			0	0	Clear	
Los Angeles, California	29.58	751.3	29.94	759.4	66	18.9	78	W	2	0.9			10s		W	0	0	Cloudy	
Louisville, Kentucky	29.49	749.0	30.05	763.3	56	13.3	80	N	7	3.1		0	Sm'e		N	0	0	Clear	
Lynchburg, Virginia	29.32	744.7	29.99	761.7	63	17.2	71	NW	3	1.3		0	0			0.33	8.4	Clear	
Maricopa Wells, Arizona					68	20.0	52	SE				0	1ks		SW	0	0	Clear	
Marquette, Michigan	29.45	748.0	30.17	766.3	45	7.2	60	Calm	0	0		0	0			0	0	Clear	
Mason, Texas	28.54	724.9	30.32	770.1	58	14.4	53	N	1	0.4						0	0	Clear	
Memphis, Tennessee	29.77	756.1	30.08	764.0	60	15.6	88	N	2	0.9		0	8'mer'g		N; Calm	0	0	Clear	
Milwaukee, Wisconsin	29.52	749.8	30.20	767.1	59	15.0	70	SE	9	4.0		0	1ks		NE	0	0	Clear	
Mobile, Alabama	29.88	758.9	29.92	760.0	67	19.4	82	N	10	4.5			10s		N	0.03	0.8	Cloudy	
Montgomery, Alabama	29.68	753.9	29.91	759.7	67	19.4	84	N	7	3.1			10ks		NE	0.43	10.9	Clearing	
Morgantown, West Virginia	29.01	736.8	30.06	763.5	49	9.4	85	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.70	602.0	30.06	763.5	39	3.9	63	W	3	1.3		5k	5ks	W	W	0	0	Cloudy	
Nashville, Tennessee	29.63	750.0	30.06	763.5	58	14.4	81	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	29.74	755.4	29.86	758.4	56	13.3	87	Calm	0	0		0	Haze			0	0	Clear	
New London, Connecticut	29.83	757.7	29.88	758.9	56	13.3	80	N	4	1.8		0	1s		NW	0	0	Clear	
New Orleans, Louisiana	29.88	758.9	29.94	760.5	68	20.0	65	N	10	4.5		0	0			0.01	0.3	Clear	
Newport, Rhode Island	29.82	757.4	29.86	758.4	60	15.6	81	N	3	1.3		0	0			0	0	Clear	
New York, New York	29.75	755.6	29.92	760.0	57	13.9	81	W	5	2.2		Haze	Fog		Calm	0	0	Foggy	
Norfolk, Virginia	29.89	759.2	29.94	760.5	64	17.8	94	NE	4	1.8		4ck	1ks;hr	SW	NE; Calm	0.67	17.0	Threatening	
North Platte, Nebraska	26.97	685.0	29.45	748.0	59	15.0	70	NE	5	2.2		0	0			0	0	Clear	
Olympia, Washington Ter.	30.03	762.7	30.07	763.8	43	6.1	91	S	1	0.4			10s		Calm	Inap.	Inap	Cloudy	
Omaha, Nebraska	28.92	734.6	29.97	761.2	58	14.4	64	S	7	3.1		0	0			0	0	Clear	
Oswego, New York	29.73	755.1	30.04	763.0	54	12.2	68	N	16	7.2		10k	0	N		0.30	7.6	Cloudy	
Pembina, Dakota	28.91	734.3	29.72	754.9	47	8.3	85	S	18	8.0		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.89	759.2	29.94	760.5	58	14.4	69	NW	9	4.0		1cs	Fog	W	Calm	0	0	Clear	
Phœnix, Arizona					71	21.7	44	E				0	0			0	0	Clear	
Pike's Peak, Colorado	17.91	454.9	30.13	765.3	35	1.7	45	SW	48	21.5		5cs	5s	SW	SW	0	0	Cloudy	
Pioche, Nevada	24.02	610.1	29.79	756.7	53	11.7	48	S	6	2.7		0	0			0.03	0.8	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.06	763.5	49	9.4	100	NW	3	1.3		2k	Fog	NW	Calm	0	0	Fair	
Port Huron, Michigan	29.46	748.3	30.12	765.0	50	10.0	78	NE	5	2.2		10k	0	NE		Inap	Inap.	Cloudy	
Portland, Maine	29.81	757.2	29.86	758.4	56	13.3	87	Calm	0	0		5k	Haze	Calm		0	0	Fair	
Portland, Oregon	30.03	762.7	30.13	765.3	45	7.2	100	S	1	0.4			Fog		Calm	0.18	4.6	Foggy	
Prescott, Arizona					53	11.7	74	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.88	758.9	29.90	759.4	84	28.9	71	W	16	7.2		0	5ks		Calm	0	0	Fair	
Red Bluff, California	29.54	750.3	29.83	759.2	60	15.6	65	Calm	0	0		2c	2s	Calm	Calm	0	0	Fair	
Rochester, New York	29.45	748.0	30.03	763.5	53	11.7	60	N	12	5.4		1k	0	N		0.13	3.3	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.52	749.8	30.11	764.8	45	7.2	92	Calm	0	0		0	1s		Calm	0.05	1.3	Clear	
Sacramento, California	29.81	757.2	29.89	759.2	55	12.8	80	S	6	2.7		0	Sm'e		Calm	0	0	Smoky	
St. Louis, Missouri	29.53	750.0	30.10	764.5	58	14.4	82	N	8	3.6		0	0			0	0	Clear	
St. Marks, Florida	29.77	756.1	29.79	756.7	69	20.6	97	NW	5	2.2			10s			0.06	1.5	Cloudy	
St. Paul, Minnesota	29.20	741.7	30.03	762.7	53	11.7	79	SE	2	0.9		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.55	649.0	29.88	758.9	64	17.8	52	SW	8	3.6			10s		SW	0.12	3.0	Cloudy	
San Antonio, Texas	29.39	746.5	29.98	761.5	59	15.0	69	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.86	758.4	29.93	760.2	65	18.3	83	NW	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.46	748.3	30.13	765.3	59	15.0	70	NE	20	8.9		7k	0	NE		0	0	Fair	
Sandy Hook, New Jersey	29.89	759.2	29.91	759.7	60	15.6	82	NW	12	5.4		0	Haze			0	0	Clear	
San Francisco, California	29.87	758.7	29.94	760.5	55	12.8	90	W	8	3.6		0	1s		Calm	0	0	Clear	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	56	13.3	18	SE	4	1.8		2ks	5s	NW	SE	0	0	Fair	
Savannah, Georgia	29.77	756.1	29.86	758.4	69	20.6	95	E	12	5.4			10s		E	1.07	27.2	Threatening	
Shreveport, Louisiana	29.84	757.9	30.06	763.5	64	17.8	78	Calm	0	0		0	0			0	0	Clear	
Smithville, North Carolina	29.85	758.2	29.88	758.9	71	21.7	90	NE	11	4.9			10s		NE	1.10	27.9	Cloudy	
Springfield, Massachusetts	29.69	754.1	29.82	757.4	53	11.7	86	SW	1	0.4			10s		SW	0	0	Cloudy	
Stanwix, Arizona					70	21.1	79	Calm				0	0			0	0	Clear	
Stockton, Texas					52	11.1	79	S	8	3.6		0	0			0	0	Clear	
Thatcher's Island, Mass	29.81	757.2	29.86	758.4	59	15.0	87	Calm	0	0		2k	0	Calm		0	0	Fair	
Toledo, Ohio	29.46	748.3	30.13	765.3	53	11.7	79	N	8	3.6		0	0			0	0	Clear	
Tucson, Arizona	27.42	696.5	29.97	761.2	72	22.2	60	N				0	2s			0	0	Fair	
Tybee Island, Georgia	29.82	757.4	29.85	758.2	71	21.7	95	NE	22	9.8			10ks		NE	2.54	64.1	Threatening	
Umatilla, Oregon	29.70	754.4			48	8.9	77	W	6	2.7		2k	0	Calm		0.04	1.0	Clear	
Vicksburg, Mississippi	29.80	756.9	30.06	763.5	56	13.3	93	N	3	1.3		0	0			0	0	Clear	
Virginia City, Montana	24.12	612.6	29.60	751.8	50	10.0	51	Calm	0	0			10s		W	0	0	Cloudy	
Visalia, California	29.55	750.6	29.92	760.0	56	13.3	68	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	29.87	758.7	29.99	761.7	57	13.9	93	NW	5	2.2		0	0			0	0	Clear	
Wickenburg, Arizona					61	16.1	36	NW				0	0			0	0	Clear	
Wilmington, N. Carolina	29.81	757.2	29.89	759.2	67	19.4	94	NE	8	3.6			10s		NE	1.55	39.4	Cloudy	
Winnemucca, Nevada	25.54	648.7	29.90	759.4	55	12.8	27	SW	10	4.5		0	0			0	0	Clear	
Wood's Holl, Mass	29.82	757.4	29.87	758.7	64	17.8	78	NE	3	1.3		0	5s		NE	0	0	Fair	
Yankton, Dakota	28.65	727.7	29.91	759.7	55	12.8	68	SE	8	3.6		0	0			0	0	Clear	
Yuma, Arizona	29.63	752.6	29.79	756.7	72	22.2	52	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.84	757.9	29.88	758.9	36.5	2.5	95	E	9	4.0		2k	4s	SW	SW	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.91	759.7	29.93	760.2	81	27.2	83	Calm	0	0		7c	2ks	Calm	Calm	1.91	48.5	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	82	27.8	83	Calm	0	0		2c	2cs	SE		0.13	3.3		James Gall.
Clifton, Jamaica, W. I.																			C. Partridge.
Navassa, W. I.	29.86	758.4	29.94	760.5	84.5	29.2		NE			1					0.05	1.3	Clear	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	E				2k	Haze	NE		0	0	Hazy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.77	756.1	29.79	756.7	83	28.3	83	E				2k	5ks		E				L. V. Bigard.
Bridgetown, Barbados, W. I.	29.88	758.9	29.90	759.4	81	27.2	78	NE	28	12.5		Haze	10ks	NE				Stormy	E. Racker.
Paramaribo, D. Guiana, S. A.			29.94	760.5	82	27.8	83	E	3	1.3		0	5k			0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			68.0	20.0	80	SW			1	5cs	3ks			Inap.	Inap.	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	30.07	763.8	30.09	764.3	74.5	23.6		Calm			0					0	0		Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Conclro, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.91	759.7	58	14.4	57	13.9	87	SSW	19	8.5			2		W	0	0			Misty	
Navy Yard, Pensacola, Fla.	29.96	761.0			69	20.6	90	N	9	4.0			10		N	0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.89	759.2	63	17.2	53	11.7	96	WSW			1		10			0	0			Dense fog	
Naval Hospital, Yokohama, Japan	30.00	762.0	79	21.1	65	18.3	94	Calm			0		2c;fog		E	0	0			Fair	
Adams, Montevideo, Uraguay	29.80	756.9	61	16.1	55	12.8	74	SW			2		6		SW	0	0			D. clouds	
Alert, Miyako Bay, Japan	30.22†	767.6†	64	17.8	64	17.8	83	SW			2		10		SW					D clouds	
Alliance, Constantinople, Turkey.	30.04	763.0	84	28.9	85	29.4	44	W			2		8		SW						
Ashuelot, Che-foo, China	29.98	761.5	77	25.0	73	22.8	72	S			4		8		S&W			Smooth		D. clouds	
Canonicus, New Orleans, La	29.95	760.7	51	10.6	69	20.6	70	N			3		0							Clear	
Colorado, New York, N. Y.	29.98	761.5	64	17.8	62	16.7	72	W	7	3.1			4		W	0	0			Light fog	
Despatch, Beikos Bay, Bosphorus	30.00	762.0	83	28.3	79	26.1	70	NW			2–3		4							Pleasant.	
Essex, Madeira	30.00	762.0	75	23.9	77	25.0	86	W			2		1					Smooth		D. clouds	
Franklin, Norfolk, Va	30.02	762.5	63	17.2	65	18.3	89	N	6.4	2.9			7		N	0.6	15.			Cloudy	
Frolic, S. 2° 40′, W. 37° 08′	30.09	764.3	82	27.8	84	28.9	75	SE			4		2k		Calm	0	0	Moderate.	S&E	D. clouds	
Gettysburg, Naples, Italy	29.87‡	758.7‡			80	26.7	96	S			2		3		Calm	0	0			D. clouds	
Kearsarge, N. 9° 30′, E. 107° 29′	30.13	765.3			84	28.9	84	SW			3		2		S&W	0	0	Smooth		Hazy	
Lackawana, Port Townsend, W. T.	30.09	764.3			49	9.4	78	S			0–1		5		S					D. clouds	
Marion, Smyrna, Turkey	30.00	762.0	82	27.8	84	28.9	57	WNW			2		3		WNW	0	0	Smooth		D. clouds	
Monocacy, N. 38° 45′, E. 141° 50′	30.09	764.3	71	21.7	68	20.0	70	ENE			3		8		E	0	0	Moderate.	SE	D. clouds	
New Hampshire, Port Royal, S. C.	30.04	763.0			79	26.1	57	NE	16	7.2			10		SE	0.91	23.1			D. clouds	
Omaha, Coquimbo, Chili	30.05	764.0	63	17.2	63	17.2	82	NNE	1	0.4			1		Calm	0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.03	762.7	68	20.0	66	18.9	84	N			1		10					Long	W	Hazy	
Ossipee, New York, N. Y.	29.95	760.7	65	18.3	60	15.6	82	WNW			2		4		NW					D. clouds	
Palos, Ningpo, China	30.01	762.2	76	24.4	73	22.8	100	ESE			1		3		S						
Pensacola, Mare Island, Cal.	30.02	762.5			58	14.4	82	SW			1–2		0			0	0			Clear	
Plymouth, New York, N. Y.	30.16	766.1	64	17.8	59	15.0	88	SW			1		0							Clear	
Ranger, Nagasaki, Japan	30.20	767.1			79	26.1	78	N			0–1		7		NNE					Pleasant	
Rio Bravo, Brownsville, Texas	29.96	761.0			61	16.1	88	NW			2		1		Calm					Blue sky	
Santee, Annapolis, Md.	30.03	762.7	65	18.3	64	17.8	78	NW			1		2			0	0			Clear	
St. Louis, League Island, Pa	29.85	758.2	56	13.3	55	12.8	93	NNW	2	0.9			0			0	0			Fair	
Tennessee, N. 37° 36′ 00″ E. 141° 24′ 30″	30.04	763.0	73	22.8	69	20.6	85	ENE	18	8.0			10		S&E	0	0	Light	E	D. clouds	
Trenton, Marseilles, France	29.85	758.2	72	22.2	72	22.2	95	SW	6	2.7			7		S&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	30.04	763.0	84	28.9	84	28.9	60	WNW			1–2		2		N&W					Hazy	
Wabash, Boston, Mass	29.91	759.7	61	16.1	62	16.7	77	WSW	2	0.9			2		Calm	0	0			Hazy	
Wyoming, Washington, D. C.	30.28†	769.1†	66	18.9	[illegible]	16.7		Calm			0		2							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 45° 26′, W. 160° 06′			30.43*	772.9*	56	13.3	94	WNW			4		10		W	Moderate.	WNW	Overcast	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 27° 38′, E. 119° 26′					82	27.8		ESE			7		7		SE	Broken	ENE; SE	Threatening	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio, N. 45° 43′, W. 43° 14′			30.12	765.0	63.5	17.5	60	NNW			5					Long	NW	Blue sky	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio N. 39° 32′, W. 71° 47′			29.82*	757.4*	65	18.3	94	N			6		10		NE	Small	SE	Stormy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.78	756.4	71	21.7	90	NE	11	4.9			108		NE			Overcast	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 22, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time,
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIYO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.85	758.1	80.6	27.0	59	N			1		3			0	0	Fair	Michel.
Algiers			29.79	756.6	82.0	27.8	66	N			1		3			Inap.	Inap.	Fair	Peter.
La Calle			29.82	757.4	81.3	27.4	67	NNE			3		8			0	0	Cloudy	Fleury.
Tunis			29.84	757.9	93.2	34.0		SE			5		2			0	0	Clear	Jacques.
Sfax			29.91	759.7	86.0	30.0		ESE			1		7			0	0	Cloudy	Husson.
Saida			29.85	758.1	78.4	25.8		ENE			2		2			0.260	6.6	Clear	Millot.
Tebessa			29.92	760.0	86.4	30.2		W			5		2			0	0	Clear	Bourgeois.
Geriville			29.83	757.7	82.4	28.0	18	S			3		4			0	0	Fair	Lemaillot.
Laghouat			29.90	759.4	75.2	24.0	60	W			2		8			0	0	Cloudy	François.
Biskra			29.90	759.4	93.6	34.2	47	SE			2		8			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2.919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.12	739.6	29.67	753.5	51.4	10.8	76	NE			3		10			0.638	16.2	Raining	Prof. Ivan Stowir
Cracow, I. R. Observatory	29.00	736.6	29.76	756.0	51.1	10.6	74	W					10			0.055	1.4		Dr. Wierzbiski.
Eperies	28.84	732.6	29.71	754.6	56.1	13.4	88	N			2		10ns		S	0.215	5.45		Julius Mikolik.
Gratz	28.49	723.7	29.74	755.5	50.0	10.0	95	S			3		10			1.181	30.0		Andreas Rospini.
Hermannstadt	28.26	717.8	29.63	752.5	67.8	19.9	54	SE			1		7			0.146	3.70	Raining	Prof. Reissenberger.
Kremsmünster	28.41	721.5	29.75	755.7	46.6	8.1	91	Calm			0		10			0.528	13.4		Prof. C. Wagner.
Lemberg	28.70	728.9	29.69	754.1	46.9	8.3	86	NW			1		10			0.165	4.2		Dr. T. Stanecki.
Pola	29.48	748.7	29.58	751.4	72.3	22.4	75	SSW			2		8ks			0.073	1.85		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.33	744.9	29.60	751.8	65.5	18.6	90	S			1		10			0.311	7.90		Karl Stancel.
Trieste	29.51	749.5	29.61	752.1	71.6	22.0	76	S			1		6			1.028	26.1		P. Busin.
Vienna	29.08	738.6	29.78	756.4	48.4	9.1	91	NW			1		10			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.35	720.0	29.86	758.5	48.2	9.0	66	NW			1		4			0.004	0.1		Royal Observatory.
Brussels	29.65	753.2	29.85	758.2	52.9	11.6	54	WNW			3		5		NW	0.014	0.35		
Furnes																			
Maeseyck	29.72	754.8	29.85	758.1	53.4	11.9	86	SSW			2		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.77	756.1	29.87	758.7	51.4	10.8		WNW	26	11.6			9			0.075	1.91	Overcast	C. H. Thompson; W. Boswell.
Ardrossan	29.99	761.7	30.00	762.0	54	12.2		NW			3		8					Overcast	William McNeil.
Armagh, Observatory			30.10	764.5	53.8	12.1		N	6	2.7			9					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.01	762.2	53.3	11.8		NW	14	6.3			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.14	765.5	53.7	12.1		NNW			1		10					D. clouds	J. Dreyer.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)			29.88	758.9	82.0	27.8		SE			3		4?					Overcast?	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.93	760.2	58.1	14.5		N			1		7					D. clouds	H. Todd. [H.C
Cardington			29.95	760.7	55.0	12.8		N			1		5					D. clouds	John McLaren.
Chatham, School M. E.	29.78	756.4	29.91	759.7	54.2	12.3		NW			2		6					Hazy	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.55	725.2	30.03	762.7	50.0	10.0		N			2		5					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.02	762.5	30.05	763.3	57	13.9		NNE			4		8					D. clouds	J. Mac Gowan.
Dover	29.88	758.9	29.90	759.4	54	12.2		NNE			3		2					¼ clouded	J. Costello.
Eccles, (near Manchester)			29.98	761.5	52.7	11.5		NNW	1.2	0.5			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.82	757.4	30.06	763.5	55.6	13.1		N			3		1					D. clouds	The Staff.
Fort Napier, (Natal)	27.68	703.1	29.86	758.4	82.8	28.2		E			2		2					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.99	761.7	86	30.0		Calm?			1?		3					D. clouds	
Galway, Queen's College			30.11	764.8	56	13.3		N			1		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.78	756.4	29.82	757.4	72.5	22.5		SW			6		7			Blank	Blank	D. clouds	Corpl. C. Aitken, A. H.C.
Glasgow, Observatory	29.77	756.1	29.97	761.2	53.2	11.8		WNW			3		7					D. clouds	D. G. Maclean.
Great Yarmouth	29.88	758.9	29.89	759.2	53	11.7		NNW			3		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.77	756.1	29.94	760.5	56.8	13.8		N			2		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.76	755.9	29.98	761.5	56.5	13.6		NNW			3		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.04	763.0	59	15.0		N			4		0			0	0	Fine	M. P. Moyle.
Holyhead	30.00	762.0	30.07*	763.8*	53	11.7		NNW			4		3					D. clouds	John Tilston.
Jersey	29.69	754.1	29.99	761.7	53.5	11.9		NE			4		4					D. clouds	J. Fisher.
Kew, Observatory			29.96	761.0	54.0	12.2		N	11	4.9			5					Wet	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			29.56	758.4	53.0	11.7		N			2		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.78	756.4	29.86	758.4	87.6	30.9		SE			1		6					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	29.79	756.7	29.88	758.9	52	11.1		NW			3		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.00	762.0	83.5	28.6		N			1		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.89†	759.2†	30.08†	764.0†	54.3	12.4		NNW			2		5ck		NNW	0.074	1.88	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.45	748.0	29.97	761.2	52.1	11.2		NNW			3		3					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.97	761.2	52	11.1		N			3		6					D. clouds	F. Lucas
Plymouth	29.95	760.7	30.02	762.5	57.2	14.0		NNE			3		2					D. clouds	John Merrifield.
Roche's Point	30.08	764.0	30.12	765.0															W. Kennedy.
Saint Ann's Head	29.89	759.2	30.05	763.3	54	12.2		N			2		6					Showery	John C. Walker.
Sandwick Manse, (Orkneys)			29.83	757.7	50	10.0		NW	27	12.1			10					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.90	759.4	78.4	25.8		SW			1		5					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.74	755.4	29.98	761.5	51.9	11.1		NW			2		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.96	761.0	29.99	761.7	60.0	15.6	60	N			1		7			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					51.2	10.7							5					D. clouds	W. C. Carlisle, for Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)			29.92	760.0	51	10.6		NW			4		10					Drizzling	John Smith.
Stratfield Turgiss	29.75	755.6	29.97	761.2	55.2	12.9		N			1		4					Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso			29.85	758.2	52	11.1		WNW			5		8					Showery	John Trotter.
Truro, Royal Institution			30.04	763.0	60	15.6		N			6		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.18	766.6	55.8	13.2		NNE	15	6.7			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		NE			3		5						Henry Mercer.
Cape Good Hope, Obs'y	29.83	757.7	29.87	758.7	56.3	13.5	100	NNW	18	8.0		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.21	767.3	49.5	9.7	87	S			3		10n						Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.96	761.0	52.8	11.6		W			3	9ck		N		0.02	0.5	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.5	74.9	23.8	58	ENE	16.8	7.5		4	0	WNW		0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.00	762.0	30.09	764.3	45.7	7.6	91	E	7	3.1			2			0.18	4.6	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.04	763.0	53	11.7		NW			6		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.76	755.9	49	9.4		NW			6	4	7	N		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Probably 30.05 inches and 763.3 mm. †Probably 29.79 inches and 756.7 mm.; 29.98 inches and 761.5 mm.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer
S. S. Algeria				Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine. N. 51° 24′, W. 34° 43′	3	NW	Overcast	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller. N. 38° 50′, W. 68° 20′	4	N	Squally	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5			68.0	20.0	92	SE			2		2cs						Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.64	752.9	29.69	754.1	49.0	9.8	70	NW			2		5						
Fanöe	29.67	753.7	29.69	754.2	47.5	8.6	78	SSE			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.97	761.2	30.01	762.3	50.5	10.3	92	W			4		10						
Thorshavn, (Faröe)	29.85	758.2	29.89	759.1	50.4	10.2	61	N			2		0						
Vestervig	29.52	749.8	29.69	754.1	48.9	9.4	70	WSW			2		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of His Excellency, U. J. Le Verrier, Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.38	746.3	29.93	760.3	59.0	15	58	NE			3		5		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School																0.031	0.8	Rainy	Bonvarque, Director.
Avignon, Normal School	29.69	754.2	29.77	756.2	55.8	13.2	77	N			3		10						Mr. Giraud, Director.
Bar-sur-Seine	29.29	743.9	29.85	758.3	54.3	12.4		NE			3		5		NE	Inap.	Inap.	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.61	752.0	29.89	759.2	56.7	13.7	53	NE			2		8		NNE	0	0	Very cloudy	Normal School.
Besançon	28.92	734.5	29.82	757.3	54.9	12.7	72	E			4		5		E	0.425	10.8	Cloudy	Normal School.
Bourg-en-Bresse	28.98	736.0	29.89	759.1	53.4	11.9	71	N			2		5kn		N	0.08	2.	Cloudy	Normal School.
Bourges, Normal School	29.33	744.9	29.88	758.9	52.7	11.5	69	NE			2		5		NE	0.071	1.8	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.71	754.6	29.93	760.2	55.2	12.9	54	NNE			4		2k		NNE	0	0		The Staff.
Carcassonne, Normal School	29.34	745.2	29.75	755.6	60.6	15.9	75	W			2		10		W	0.213	5.4	Covered	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.55	750.6	29.87	758.7	55.4	13.0	53	N			2		2k		N	0.634	16.1	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.43	722.2	29.76	756.0	58.3	14.6	55	N			1		10		N	0.067	1.7	Covered	Alluard, Director.
Commercy, Normal School	28.99	736.4	29.87	758.8	51.8	11	52	NE			2		5		NE	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.58	725.8	29.72	754.8	58.8	14.9	80	NW			2		10		SW	0.055	1.4	Rainy	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.68	753.8	29.89	759.1	57.2	14	45	NW			6		5		NW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.62	752.3	29.93	760.1	55.4	13	62	NE			2		8		NE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.87	733.3	29.78	756.3	55.0	13.1	57	NE			2		2		SW	0.094	2.4	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	29.80	756.9	29.90	759.4	59.7	15.4	38	N			4		2		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.09	738.9	29.74	755.4	55.4	13	73	NE			4		5		N	0.055	1.4	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.71	729.1	29.74	755.4	53.2	11.8	68	NNW			2		2		NNW	0.189	4.8	Slightly cl'dy	Normal School.
Nismes, Normal School	29.73	755.2	29.93	760.1	64.9	29.4	26	N			8		2		N	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.63	752.7	29.87	758.8	54.7	12.6	54	NE			1		8		N	0	0	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.85	758.1	29.88	758.9	59.0	15.0	48	NE			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.82	757.5	29.91	759.7	56.8	13.8	65	NNW			3		5		N	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	28.72	729.5	29.80	756.9	55.4	13	93	NW			1		10		E	0.51	13.	Covered	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.73	755.1	29.76	755.8	81.0	27.2										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			29.65	753.2	62.6	17.0	78	NNW			1		10			0.028	0.70	Raining	The Staff.
Mont-Louis	24.61	625.2	29.93	760.2	50.0	10.0	71	SW	13.0	5.83			10		SW	0.417	10.6		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.59	751.6	29.87	758.6	55.0	12.8	55	NNE			2–3		8		N	Inap.	Inap.		Marié Davy, Director.
Perpignan			29.74	755.4	59.0	15.0	82	N	5.6	2.50			10		NW	0.413	10.5		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.17	537.7			38.8	3.8		SW			2		10					Rain & snow	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.30	566.3			36.0	2.2		SW			2		10			0.535	13.6	Rain & snow	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.71	754.7	29.88	758.9	55.4	13.0	62	N			1		9		N	0.004	0.1		E. Renou.
Toulouse, Observatory	29.08	738.6	29.80	756.9	55.9	13.3	93	NW			3		10			0.327	8.3	Raining	The Staff.
Tours	29.67	753.7	29.87	758.7	59.4	15.2	58	NE			1		5		N	0.126	3.2		C. Marquet.
Versailles, (near Paris)			29.88	758.9	55.0	12.8	59	NE			2		9			0.013	0.34	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.02	762.4	30.04	763.0	69.6	20.9	82	NNW	1.8	0.8			3ck		SW	0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 9:50, instead of 9:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.61	752.1	29.78	756.4	53.6	12.0	50	SW			1		5			0.051	1.30		Prof. Arndt.
Breslau	29.28	743.8	29.81	757.2	48.9	9.4	74	NW			1		10			0.368	9.11		Royal University Obs'y.
Carlsruhe	29.37	746.1	29.80	756.8	53.2	11.8	72	N			1		3			0.976	24.8		Albert Senz.
Cassel	29.28	743.8	29.89	759.2	55.4	13.0	68	SW			2		3	SW		0.052	1.32		Dr. H. Möhl.
Crefeld	29.65	753.2	29.82	757.3	53.6	12.0	68	N			0		4k			0.08	2.		Director Lose.
Emden	29.77	756.1	29.80	757.0	49.3	9.6	92	NNW			3		10			0.031	0.8		Prof. Prestel.
Frankfort on the Main	29.49	749.1	29.86	758.4	51.1	10.6	59	SE			1		4			0.016	0.4		Physical Society.
Friedrichshafen	28.38	720.8	29.82	757.4	48.2	9.0	75	NNE			6		10	WNW				Light rain	M. Wilhelm.
Hamburg	29.70	754.4	29.77	756.2	50.5	10.3	73	SW			3		3k			0.028	0.7	Fair	Captain F. Hegemann.
Kiel	29.71	754.6	29.72	755.0	51.8	11.0	56	W			2		8			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.61	752.1	29.68	753.9	48.9	9.4	59	NW			2								Prof. E. Luther.
Köslin			29.75	755.7	47.1	8.4		W			2		3			0.382	9.7		H. Müller.
Leipsic, Observatory	29.41	747.0	29.83	757.7	54.0	12.2	57	NW			1		6	W		0.004	0.1		Prof. Bruhns.
Memel, Naval School	29.56	750.7	29.60	751.9	48.4	9.1	63	WNW			5-6		5k	W				Squally	Reinbrecht von Skalweit.
Neufahrwasser	29.71	754.5	29.72	754.9	49.1	9.5	66	NW			2		9			0.059	1.5		A. Lothes.
Posen	29.52	749.8	29.81	757.2	52.0	11.1	49	NW			2		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.28	743.7	29.83	757.7	52.2	11.2	74	NE			3		5	SW		0.472	12.01		Dr. Schur.
Stuttgart	28.86	733.1	29.80	757.0	51.3	10.7	69	W			1		7	W		0	0	Foggy	Prof. Schoder.
Treves, (Trier)	29.21	741.9	29.72	755.0	50.7	10.4	72	NE			4		5			0.047	1.20	Graupeln	Prof. Flesch.
Weissenburg, (Bavaria)	28.30	718.9	29.81	757.2	50.0	10.0	57	NNW			1		8	NW		0.087	2.2		Dr. Von Bebber.
Wustrow, Naval School	29.77	756.1	29.81	757.2	50.2	10.1	68	W			2		4						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.63	752.6	30.00	762.1	84.7	29.3		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.74	755.3	29.79	756.6	83.8	28.8	75	WSW	28.0?	12.5?			6		WSW	0	0	D. clouds	
Deesa																			
Bombay	29.73	755.2	29.77	756.1	82.7	28.2	86	NW	19.0	8.5			10		N	0.01	0.3	Raining	
Poona	27.75	704.8	29.75	755.6	77.3	25.2	80	W					10	W	W	0	0	D. clouds	
Lahore	29.00	736.5	29.72	754.8	96.0	35.6	50	SW	1.7	0.8			4			0	0		
Belgaum	27.28	692.8	29.83	757.7	71.9	22.2	91	W	3.0	1.3			10	E	ENE	1.53	38.9	Thunder; lightn'g	
Bangalore																			
Roorkee	28.80	731.5	29.67	753.6	95.6	35.3	27	NW	2.4	1.1						0	0		
Agra	29.13	740.0	29.68	753.7	99.7	37.6	25	W								0	0		
Trichinopoly																			
Nagpur	28.71	729.2	29.75	755.5	82.3	27.9	76	Calm	1.7	0.8			9			0.33	8.4	D. clouds	
Madras																			
Lucknow	29.32	744.6	29.68	753.8	94.1	34.5	31	WNW	1.5	0.7			2		E	0	0	D. clouds	
Allahabad	29.37	746.9	29.67	753.6	90.7	32.6	51	Calm	2.1	0.9			3	S		0	0	D. clouds	
Patna	29.53	750.1	29.71	754.6	89.2	31.8	73	E	2.0	0.9			6	E	E	0	0	D. clouds	
Hazaribagh	27.76	705.0	29.76	755.8	80.3	26.8	65	SSE	6.0	2.7			10		S			Raining	
Cuttack	29.70	754.5	29.78	756.5	83.5	28.6	67	SE	0.5	0.2			2			0	0	D. clouds	
Calcutta (Alipore)	29.76	755.8	29.78	756.3	81.7	27.6	83	SW	2.0	0.9			5			0	0	D. clouds	
Goalpara	29.37	746.1	29.76	756.0	79.3	26.3	90	SW	1.2	0.5			3	SW	SW	0	0	D. clouds	
Chittagong	29.71	754.6	29.80	756.8	82.5	28.1	87	Calm	4.0	1.8			3			0	0	D. clouds	
Sibsagar	29.46	748.2	29.79	756.8	80.0	26.7	91	NE	2.0	0.9			10	SW	SW	0.15	3.8	D. clouds	
Rangoon																			
Jubbulpore	28.40	721.4	29.75	755.6	86.5	30.3	65	NW	1.1	0.5						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,026 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 1—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Valdobbia	21.89	556.1	29.70	754.3	39.6	4.2	87	N			4		10	NW		0	0		Ab. Dom. Morgini.
Stelvio	21.86	555.3	29.70	754.3	39.6	4.2		WSW			6		10			0.224	5.7		Signora Ernesta Manfredi.
Udine	29.18	741.1	29.59	751.5	66.2	19.0	85	SW	0.7	0.3			10			0.134	3.4		Prof. Giovanni Clodig.
Padua	29.41	746.9	29.52	749.7	68.9	20.5	78	SW	0	0			3			0.150	3.8		Prof. Dott. Lorenzoni.
Vicenza	29.31	744.4	29.50	749.3	73.0	22.8	59	NW	0.7	0.3			4			0	0		Conte Alm. Da Schio.
Verona	29.31	744.4	29.53	750.0	80.6	27.0	53	E			1		10			0.079	2.0		Dott. B. Bertoncelli.
Bergamo	28.26	717.7	29.54	750.2	65.5	18.6	75	NW			1		10			0.035	0.9		Prof. Trionfini Carlo.
Domodossola	28.52	724.4	29.54	750.3	63.5	17.5	80	Calm			0		10			0	0		Prof. Giuseppe Calza.
Milan	29.02	737.2	29.54	750.3	69.8	21.0	66	E			1		10	NE		0.016	0.4		Ab. Gio. Capelli.
Pavia	29.19	741.4	29.54	750.2	68.2	20.1	74	NE			1		9	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.65	727.6	29.55	750.6	68.2	20.1	59	NNW	0	0			9	W		0	0		Prof. P. F. Denza.
Mondovi	27.68	703.0	29.58	751.3	66.6	19.2	58	NW			2		9	W		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.34	745.1	29.59	751.5	73.2	22.9	59	SW			8		4	W		0	0		Prof. L. Vassallo.
Genoa	29.39	746.6	29.56	750.9	71.2	21.8	72	SE	8.7	3.9			10	SW		0.157	4.0		Prof. G. M. Garibaldi
Placenza	29.27	743.5	29.53	750.0	72.3	22.4	60	NE	6.3	2.8			6	SW		0	0		Dott. G. Manzi.
Parma	29.20	741.6	29.51	749.5	75.4	24.1	39	W			8		5			0.075	1.9		Prof. P. Pigorini.
Florence	29.39	746.4	29.64	752.9	72.5	22.5	78	NW			2		10	SW		2.134	54.2		Cav. F. Meucci.
Leghorn	29.53	750.0	29.61	752.1	72.7	22.6	84	SSW	6.3	2.8			10	NW		1.646	41.8		Prof. P. Monte.
Siena	28.47	723.1	29.67	753.6	73.6	23.1	72	SW	6.3	2.8			9	SW		1.114	28.3		Prof. L. Toscani.
Urbino	28.12	714.2	29.67	753.5	68.5	20.3	65	SW			2		10			0.472	12.0		Prof. P. Serpieri.
Pesaro	29.56	750.7	29.60	751.9	69.8	21.0	85	SW	0	0			10	W		0.370	9.4		Prof. Luigi Guidi.
Ancona	29.50	749.2	29.60	751.9	71.2	21.8	72	ENE			4		6	W		0.886	22.5		Prof. F. DeBosis.
Grosseto	29.60	751.9	29.71	754.7	75.2	24.0	74	SSE			6		8	S		0.012	0.3		Avv. P. Ponticelli.
Rome	29.54	750.3	29.71	754.7	74.5	23.6	66	S	5.6	2.5			10			0.059	1.5		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.63	752.5	29.82	757.5	79.2	26.2	84	WSW			4		10	SW		0.039	1.0		Prof. L. Palmieri.
Lecce	29.56	750.9	29.81	757.2	81.7	27.6	65	WSW	37.4	16.7			10	SW		0.031	0.8		Prof. C. DeGiorgi.
Cosenza	29.02	737.1	29.80	759.2	83.7	28.7	52	SSE	3.8	1.7			5	SE		0.118	3.0		Prof. F. D. Conti.
Cagliari	29.53	750.1	29.72	754.8	83.3	28.5	48	W			4		6	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.85	758.2	29.90	759.4	80.6	27.0	63	SW			2		3	NE		0	0		Prof. F. Cafiero.
Palermo	29.55	750.5	29.80	756.8	92.8	33.8	44	SSW	8.1	3.6			9			0	0		Prof. G. Cacciatore.
Caltanissetta	28.02	711.6	29.89	759.1	80.6	27.0	58	SSW			4		5			0	0		Prof. A. Pagani.
Syracuse	29.89	759.1	29.81	757.2	83.8	28.8	68	SW			4		9	SSW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.29	743.9	29.84	758.0	76.3	24.6	86	SW	3.8	1.7			10	W		0.020	0.5		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokiyo, Japan.

Tokiyo (Yeddo)																				The Observatory.
Tokiyo (Yeddo) University	30.06	763.5	30.16	766.1	64	17.8	97	Calm	0	0			1cs			0	0	Fair		Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																				I. N. Marin, M. D.
Córdoba																				C. Peña, M. D.
Cuernavaca																				L. Castillo, A. E.
Guadalajara																				Prof. L. Perez.
Guanajuato																				Prof. V. Fernandez.
Leon																				Prof. M. Leal.
Mexico	23.12	587.2	30.16	766.0	48.2	9.0	88	NW	0.3	0.14		0	3cs			0	0	Foggy		Central Observatory.
Orizaba																				N. N.
Orizaba																				I. Orozco, M. D.
Pabellon, (Aguascalts)																				M. V. de Leon, M. E.
Puebla																				Prof. B. Gonzalez.
Toluca																				Prof. C. Velazquez.
Tlacotalpam																				Prof. F. R. Bayly.
San Luis Potosí																				G. Barroeta, M. D.
Vera-Cruz																				Prof. J. Rossell.
Zacatecas																				J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Cordoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.89	759.1	29.89	759.1	58.1	14.5		WNW			2					0.189	4.8			
Groningen	29.75	755.6	29.80	757.0	50.2	10.1		W			2					0.079	2.0			
Helder	29.82	757.4	29.82	757.4	53.4	11.9		W			2					0.370	9.4			
Utrecht	29.80	756.9	29.85	758.1	54.5	12.5	69	NW			3		5			0.024	0.6	Cloudy		H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.60	751.9	29.66	753.3	47.8	8.8	66	NNW	5.6	2.5			1			0	0		
Brönö	29.65	753.2	29.69	754.2	45.3	7.4	57	Calm	0	0			7			0	0		
Christiania	29.48	748.9	29.63	752.6	50.7	10.4	33	SSW	13	6			8			0	0		
Tromsö	29.68	753.8	29.72	754.9	38.8	3.8	57	SW	4	2			0			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.89	759.3	30.08	764.1	65.8	18.8	88	N	0.7	0.3			7			0.079	2.0			Dr. J. A. Sampaio
Campo Major	28.77	730.7	29.79	756.7	62.4	16.9	92	SW	5.6	2.5			10	SW		0.360	8.9	Light rain		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.85	758.1	29.93	760.3	77.9	25.6	54	W	3.1	1.4			5			0	0			Capt. D. A. de Cunha.
Lisbon, Observatory	29.40	746.7	29.76	755.8	64.6	18.1	86	WSW	4.9	2.2			0			0.071	1.8			The Staff.
Ponta Delgada, (Azores)	30.01	762.2	30.08	764.0	69.1	20.6	71	NE					10			0.016	0.4			

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India Ponta Delgada.			30.09	764.3	71.6	22.0	64	NNW			5		10	NNW	NNW	2		Overcast	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Vienna symbols; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.34	745.1	29.76	755.8	49.6	9.8	60	W	7	3			9						Astronomical Obs.
Wilna	29.23	742.5	29.65	753.1	51.1	10.6	62	WSW	4	2			4						Astronomical Obs.
Dorpat	29.16	740.6	29.40	746.8	44.2	6.8	88	WNW	4	2			10						Physical Cabinet.
St. Petersburg	29.36	745.7	29.37	746.1	41.5	5.3	93	SSE	9	4			10						Central Physical Obs.
Kuopio	29.15	740.4	29.47	748.6	40.1	4.5	89	E	13	6			5					Raining	Ch. Forsten.
Kieff	29.04	737.7	29.66	753.4	57.4	14.1	78	NNW	11	5			10					Light rain	Physical Cabinet.
Nikolaiev	29.78	756.3	29.85	758.1	71.2	21.8	72	S	18	8			4						Kurdakof.
Kertch	29.80	756.9	29.82	757.4	73.8	23.2	92	ESE	9	4			9						Lagorio.
Moscow	28.97	735.9	29.51	749.6	52.5	11.4	83	SSW	11	5			10					Raining	Meteorological Obs.
Lugan	29.69	754.1	29.89	759.2	67.6	19.8	52	SSW	4	2			4						Meteorological Obs.
Archangel	29.47	748.5	29.49	749.0	37.4	3.0	83	ENE	27	12			10						Ogorodnikof.
Tiflis	28.58	725.8	29.92	760.0	80.1	26.7	39	N	9	4			2						Physical Observatory.
Astrakhan	30.03	762.7	29.95	760.6	75.4	24.1	44	W	7	3			4						Sebastianof.
Kasan	29.40	746.7	29.67	753.5	52.0	11.1	94	S	2	1			10						Physical Cabinet.
Orenburg	29.82	757.5	30.20	767.1	46.8	8.2	81						10						Tschernischei.
Ekaterinburg	28.91	734.4	29.85	758.3	50.5	10.3	60	SSE	7	3			10						Meteorological Obs.
Nukuss	29.71	754.5	29.93	760.1	85.8	29.9	36	SSW	0	0			0						
Kasaly																			Bobrof.
Tashkend	28.37	720.7	30.02	762.6	71.2	21.8	65	Calm	0	0			0						Michelson.
Barnaul	29.38	746.2	29.89	759.1	64.2	17.9	58	Calm	0	0			9						Meteorological Obs.
Yeniseisk	29.62	752.3	29.76	756.0	49.5	9.7	87	ESE	4	2			6			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.80	757.0	29.95	760.6	60.1	15.6	53	S	13	6			1						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					50.9	10.5	69	SE	13	6			10						

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.: Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.28	692.9			68.6	20.3	61	SW	23.9	10.67		1	8	WSW		0.039	1.0	Almost cov'd	The Staff. Olayo Diaz, Director.
Murcia, Met. Obs'y																			R. Gil Villanueva, Dir.
Santiago, Met. Obs'y																			
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.7	29.99	761.8	77.3	25.2	80	Calm	0	0		2cs	0			0.807	20.5	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.76	755.9	29.86	758.3	66.7	19.3	93	SW	2.6	1.2		0	10		SSW	1.476	37.5		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.86	758.4	84.9	29.4	77	SE	10.5	4.69		4c	1k	E	E	0	0	D. clouds	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.26	743.3	29.30	744.3	34.9	1.6	93	NE			4		10					Snowing	
Umea	29.59	751.6	29.64	752.9	37.8	3.2	87	N			6		9			0.047	1.2		
Hernosand	29.57	751.0	29.62	752.3	40.1	4.5	73	N			4		10			0.004	0.1		
Stockholm	29.38	746.3	29.56	750.8	44.6	7.0	55	N			6		7			0.087	2.2		
Wisby	29.58	751.4	29.64	752.9	42.8	6.0	70	NW			6		10			0.303	7.7		
Sub-Series.																			
Upsala	29.51	749.6	29.59	751.5	41.9	5.5	69	NNW	11.9	5.3			10		N	0.001	0.02		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.35	720.2	29.78	756.5	52.7	11.5	65	NE			3		10			0.091	2.3	Covered	The Observatory.
Zurich	28.17	715.6	29.83	757.6	48.9	9.4	77	E			1		10			0.020	0.5	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —6.6 mm; Thermometer, —5.5 cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.94	760.4	80.6	27.0	55	SSW	4	2.0			9		WSW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.97	761.2	83.7	28.7		S			1		0						B. Stéfanidès.
Valona			29.99	761.8	86.4	30.2		S			3		5			0	0	Cloudy	A. Bertrand.
Varna			29.72	755.0	77.0	25.0		NE			2		0						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.95	760.7	87.1	30.6	65	N			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.74	755.4	29.81	757.2	49.8	9.9	71	N	11	4.9			10			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.29	769.4	45	7.2		NW	3	1.3		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B			29.74	755.4	49	9.4	85	N	18	8.0			10ks		N	0.15	3.8	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.47	748.5	53	11.7	97	N	24	10.7			10n			1.60	40.6	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	30.04	763.0	30.24	768.1	42.6	5.9	83	NW			1	0	0			0	0	Bright	James Smith, M. A.
Dalhousie, N. B	29.93	760.2	29.96	761.0	48.9	9.4	76	NW			1					0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.93	760.2	29.97	761.2	48.3	9.1	100	NE					10					Cloudy	W. H. Bevis.
*Father Point, Quebec			30.01	762.2	44	6.7	88	W	5	2.2		0	2s		W	0.30	7.6	Clear	J. McWilliams.
Fredericton, N. B	29.77	756.1	29.83	757.7	51.0	10.6	73	N	12	5.4		c	10ks			0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.86	758.4	52	11.1	96	NE	3	1.3		5k	5n	W	W	0.060	1.52	Cloudy	James Stewart.
Goderich, Ontario	29.51	749.5	30.30	769.6	51.9	11.1	81	NW			1	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	29.16	740.7	30.29	769.4	41	5.0	100	Calm			0	0	0			0	0	Clear	James Grant.
*Halifax, N. S	29.36	745.7	29.49	749.0	52	11.1	90	NW	22	9.8			10n		NW	1.483	37.67	Heavy rain	F. Allison, M. A.
Hamilton, Ontario	29.96	761.0	30.33	770.4	51.5	10.8	86	SW			2	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.51	749.5	29.54	750.3	54	12.2	90	SE			8		10n			1.50	38.1	Raining	E. Weedon.
*Kingston, Ontario	29.95	760.7	30.32	770.1	48	8.9	71	N	4	1.8		0	0			0	0	Clear	S. Woods, M. A
*Montreal, Quebec	30.00	762.0	30.20	767.1	46	7.8	64	NW	12	5.4		0	0			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.57	751.1	30.28	769.1	44	6.7	100	S	3	1.3		0	0			0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.57	751.1	30.33	770.4	42.7	5.9	91	Calm			0	Haze	Fog			0	0	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.60	751.8	30.31	769.9	41	5.0	82	N	6	2.7		0	0			0	0	Clear	H. Morgan.
Port Hastings, N. S	29.07	738.4	29.12	739.6	52.6	11.4		NE	42	18.8						2.10	53.3	Raining	Peter Grant
Port Stanley, Ontario	29.63	752.6	30.30	769.6	40	4.4	94	N	3	1.3		0	0			0	0	Clear	M. Payne.
*Quebec, Quebec	29.78	756.4	30.10	764.5	50	10.0	72	NW	16	7.2		0	0			0.31	7.9	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.81	757.2	30.29	769.4	38	3.3	100	Calm	0	0			Fog			0	0	Foggy	W. H. McIntyre.
St. John, N. B	29.61	752.1	29.77	756.1	51	10.6	80	N	12	5.4			10ks			0.10	2.5		G. Murdock, C. E.
*Saugeen, Ontario	29.55	750.6	30.26	768.6	48	8.9	77	S	4	1.8		0	0			0	0	Clear	K. Stewart.
Stayner, Ontario			30.33	770.4	47	8.3	77	SE	1	0.4		0	Haze			0	0	Hazy	R. J. Cole.
Stratford, Ontario	29.00	736.6	30.32	770.1	36.8	2.7	96	Calm	0	0			Fog			0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	28.85?	732.8?	28.88?	733.5?	55	12.8	93	N	8	3.6			10n		NE	1.72	43.7	Cloudy	T. C. Hill.
*Toronto, Ontario	29.93	760.2	30.32	770.1	47	8.3	74	Calm	0	0		Haze	0			0	0	Hazy	Magnetic Observatory.
Windsor, N S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					55.0	12.8	100	SE					10n			0.88	22.4	Stormy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

1877.—September 22.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.97	761.2	30.20	767.1	45	7.2	75	NW	12	5.4		0	0			0.15	3.8	Clear	
Alpena, Michigan	29.56	750.8	30.22	767.6	48	8.9	77	Calm	0	0		0	0			0	0	Clear	
Atlantic City, New Jersey	30.23	767.8	30.25	768.3	53	11.7	60	NW	1	0.4		0	0			0	0	Clear	
Augusta, Georgia	29.97	761.2	30.15	765.8	64	17.8	78	NE	4	1.8			10s		NE	Inap.	Inap.	Cloudy	
Baltimore, Maryland	30.24	768.1	30.29	769.4	53	11.7	54	N	9	4.0		0	Sm'e		Calm	0	0	Clear	
Barnegat, New Jersey	30.20	767.1	30.23	767.8	54	12.2	61	NW	18	8.0		0	0			0	0	Clear	
Bismarck, Dakota	28.09	713.5	29.72	754.9	54	12.2	68	N	20	8.9		0	8s		NW	0	0	Cloudy	
Boise City, Idaho	27.18	690.4	29.81	757.2	42	5.6	65	Calm	0	0		8k	2s	Calm	SW	0	0	Cloudy	
Boston, Massachusetts	29.94	760.5	30.09	764.3	49	9.4	43	NW	18	8.0		0	0			0	0	Clear	
Brackettville, Texas	28.84	732.5	29.85	758.2	60	15.6	70	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.63	727.2	29.57	751.1	61	16.1	70	SE	10	4.5		0	5ks		SW	0	0	Fair	
Brownsville, Texas	29.97	761.2	30.03	762.7	66	18.9	78	NW	2	0.9		0	0			0	0	Clear	
Buffalo, New York	29.58	751.3	30.30	769.6	46	7.8	76	NE	3	1.3		0	Sm'e		Calm	0	0	Clear	
Burlington, Vermont	29.95	760.7	30.22	767.6	47	8.3	62	N	8	3.6		2k	0	N		0.25	6.3	Fair	
Cairo, Illinois	29.75	755.6	30.14	765.5	60	15.6	76	NE	3	1.3		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.73	678.9	30.22	767.6	52	11.1	53	Calm				0	0			0	0	Clear	
Campo, California	27.32	693.9	29.89	759.2	36	2.2	71	E	1	0.4		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.10	764.5	30.11	764.8	66	18.9	73	NE	18	8.0		5k	0	NE		0	0	Fair	
Cape Henry, Virginia	30.22	767.6	30.24	768.1	62	16.7	61	N	16	7.2		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.16	766.1	30.17	766.3	66	18.9	90	NE	31	13.9		8cs	0	W		0	0	Fair	
Cape May, New Jersey	30.22	767.6	30.25	768.3	57	13.9	52	NW	18	8.0		0	0			0	0	Clear	
Charleston, South Carolina	30.04	763.0	30.10	764.5	67	19.4	79	NE	15	6.7			10s		NE	Inap.	Inap.	Threatening	
Cheyenne, Wyoming	24.94	610.6	29.98	761.5	45	7.2	60	NW	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.46	748.3	30.14	765.5	57	13.9	63	S	10	4.5		0	0			0	0	Clear	
Cincinnati, Ohio	29.50	749.3	30.14	765.5	55	12.8	62	E	3	1.3		0	Fog		E	0	0	Clear	
Cleveland, Ohio	29.57	751.1	30.31	769.9	47	8.3	72	E	7	3.1		0	0			0	0	Clear	
Concho, Texas	28.24	717.3	29.95	760.7	52	11.1	78	W	6	2.7		0				0	0	Clear	
Corsicana, Texas	29.58	751.3	30.05	763.3	60	15.6	82	NE	4	1.8		0	0			0	0	Clear	
Davenport, Iowa	29.46	748.3	30.09	764.3	56	13.3	80	SE	1	0.4		0	0			0	0	Clear	
Denison, Texas	29.27	743.4	30.05	763.3	64	17.8	72	S	7	3.1		0	0			0.01	0.3	Clear	
Denver, Colorado	24.79	629.6	30.01	762.2	52	11.1	53	SE	6	2.7		0	0			0	0	Foggy	
Detroit, Michigan	29.56	750.8	30.24	768.1	50	10.0	78	E	1	0.4			Fog		Calm	0	0	Clear	
Dodge City, Kansas	27.30	693.4	29.51	749.5	62	16.7	45	W	4	1.8		2k	0	W		0	0	Fair	
Dubuque, Iowa	29.36	745.7	30.05	763.3	55	12.8	80	S	6	2.7		5cs	0	SW		0	0	Cloudy	
Duluth, Minnesota	29.13	739.9	29.78	756.4	57	13.9	80	Calm	0	0		Haze	8s	Calm	S	0	0	Clear	
Eagle Pass, Texas	29.23	742.4	29.97	761.2	60	15.6	59	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.73	755.1	29.80	756.9	50	10.0	77	NW	22	9.8		8k	0	NW		0.16	4.1	Fair	
Erie, Pennsylvania	29.55	750.6	30.28	769.1	51	10.6	79	SE	10	4.5		0	Sm'e			0	0	Clear	
Escanaba, Michigan	29.44	747.8	30.08	764.0	59	15.0	76	S	12	5.4		0	0			0	0	Clear	
Florence, Arizona	28.29	718.6	29.89	759.2	80	26.7	24	SW				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.10	612.1	30.10	764.5	59	15.0	23	Calm	0	0		5cs	0	SW		0	0	Fair	
Fort Craig, New Mexico	25.56	649.2			58	14.4	58	NW	4	1.8		0	5s		NW	0	0	Fair	
Fort Gibson, Indian Ter.	29.49	749.0	30.01	762.2	64	17.8	67	SE	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.75	730.2	30.03	762.7	51	10.6	78	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.80	731.5	29.88	758.9	64	17.8	58	Calm	0	0		0	0			0	0	Clear	
Fort Sully, Dakota	28.14	714.7	29.75	755.6	58	14.4	69	Calm	0	0		0	Haze			0	0	Clear	
Galveston, Texas	29.98	761.5	30.03	762.7	72	22.2	85	NE	3	1.3		0	0			0	0	Clear	
Grand Haven, Michigan	29.53	750.0	30.18	766.6	52	11.1	79	SE	9	4.0		1c	Sm'e	W	Calm	0	0	Clear	
Indianapolis, Indiana	29.41	747.0	30.19	766.8	54	12.2	73	E	4	1.8		0	Sm'e			0	0	Clear	
Indianola, Texas	30.02	762.5	30.05	763.3	71	21.7	85	NW	3	1.3		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.96	761.0	29.99	761.7	74	23.3	85	Calm	0	0		0	0			0.14	3.6	Clear	
Keokuk, Iowa	29.42	747.3	30.03	762.7	60	15.6	70	SE	6	2.7		0	0			0	0	Clear	
Key West, Florida	29.92	760.0	29.95	760.7	84.0	28.9	75	S	4	1.8		5cs	0	W		0	0	Fair	
Kittyhawk, North Carolina	30.21	767.3	30.23	767.8	64	17.8	67	NE	22	9.8		1k	0	NE		0	0	Clear	
Knoxville, Tennessee	29.13	739.9	30.13	765.3	58	14.4	81	Calm	0	0		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.25	742.9	29.97	761.2	59	15.0	76	S	6	2.7		5k	0	S		0	0	Fair	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	62	16.7	41	Calm	0	0		5k	0	Calm		0	0	Fair	
Laredo, Texas					61	16.1	71	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.10	739.1	29.92	760.0	63	17.2	72	S	6	2.7		0	0			0	0	Clear	
Los Angeles, California	29.56	750.8	29.89	759.2	66	18.9	78	N	3	1.3			10s		N	0	0	Cloudy	
Louisville, Kentucky	29.59	751.6	30.15	765.8	55	12.8	73	NE	3	1.3		0	Sm'e		NE	0	0	Clear	
Lynchburg, Virginia	29.63	752.6	30.32	770.1	61	16.1	55	Calm	0	0		0	0			0	0	Clear	
Maricopa Wells, Arizona					59	15.0	44	Calm				0	0			0	0	Clear	
Marquette, Michigan	29.31	744.5	30.00	762.0	56	13.3	62	S	10	4.5		5k	0	SW		0	0	Fair	
Mason, Texas	28.40	721.3	30.18	766.6	52	11.1	79	E	2	0.9						0	0	Clear	
Memphis, Tennessee	29.79	756.7	30.10	764.5	60	15.6	81	NE	3	1.3		0	Fog		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.49	749.0	30.18	766.6	56	13.3	62	SW	10	4.5		1c	Sm'e		SW	0	0	Clear	
Mobile, Alabama	29.92	760.0	29.96	761.0	69	20.6	93	N	8	3.6			10s		NE	0	0	Cloudy	
Montgomery, Alabama	29.79	756.7	30.02	762.5	67.5	19.7	92	NE	3	1.3			10s		E	0.02	0.5	Threatening	
Morgantown, West Virginia	29.21	741.9	30.28	769.1	50	10.0	78	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.68	601.5	30.04	763.0	22	— 5.6	100	NW	42	18.8			Fog		NW	0.12	3.0	Foggy	
Nashville, Tennessee	29.61	752.1	30.14	765.5	60	15.6	82	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.06	763.5	30.17	766.3	53	11.7	60	NW	6	2.7		0	Haze			0	0	Clear	
New London, Connecticut	30.12	765.0	30.17	766.3	53	11.7	54	NW	8	3.6		0	0			0	0	Clear	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	71.5	21.9	69	N	5	2.2		0	0			0	0	Clear	
Newport, Rhode Island	30.07	763.8	30.12	765.0	51	10.6	59	NW	16	7.2		0	0			0	0	Clear	
New York, New York	30.05	763.3	30.23	767.8	52	11.1	59	NW	13	5.8		0	0			0	0	Clear	
Norfolk, Virginia	30.20	767.1	30.26	768.6	58	14.4	57	NE	12	5.4		0	0			Inap.	Inap.	Fair	
North Platte, Nebraska	26.94	684.3	29.45	748.0	53	11.7	68	NW	12	5.4		5ck	0	NW		0	0	Fair	
Olympia, Washington Ter.	29.98	761.5	30.02	762.5	41	5.0	91	S	4	1.8		0	5s		Calm	0	0	Fair	
Omaha, Nebraska	28.70	729.0	29.73	755.1	65	18.3	63	S	16	7.2		2k	2s	SW	Calm	0	0	Fair	
Oswego, New York	29.97	761.2	30.30	769.6	52	11.1	72	E	3	1.3		0	0			0	0	Clear	
Pembina, Dakota	28.97	735.8	29.78	756.4	50	10.0	100	N	17	7.6			10n		N	0.12	3.0	Light rain	
Philadelphia, Pennsylvania	30.23	767.8	30.28	769.1	53	11.7	54	NW	9	4.0		0	Sm'e		Calm	0	0	Clear	
Phœnix, Arizona					65	18.3	35	E				0	0			0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	25	— 3.9	38	NW	24	10.7		0	2ks		NW	0.01	0.3	Clear	
Pioche, Nevada	24.00	609.6	29.76	755.9	52	11.1	23	S	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.46	748.3	30.30	769.6	44	6.7	92	NE	2	0.9			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.59	751.6	30.26	768.6	48	8.9	70	SE	3	1.3		0	Sm'e			0	0	Smoky	
Portland, Maine	29.98	761.5	30.03	762.7	50	10.0	64	NW	18	8.0		1k	Haze	NW		0.34	8.6	Clear	
Portland, Oregon	30.04	763.0	30.14	765.5	42	5.6	100	E	1	0.4			Fog		Calm	0	0	Foggy	
Prescott, Arizona					43	6.1	83	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	82	27.8	70	W	4	1.8		5cs	0	Calm		0	0	Fair	
Red Bluff, California	29.53	750.0	29.88	758.9	62	16.7	51	S	6	2.7		2k	Haze	Calm	Calm	0	0	Fair	
Rochester, New York	29.66	753.4	30.29	769.4	47	8.3	77	SW	4	1.8		0	Haze		Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.54	750.3	30.13	765.3	38.5	3.6	96	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.81	757.2	29.90	759.4	54	12.2	67	S	8	3.6		0	Sm'e		Calm	0	0	Clear.	
St. Louis, Missouri	29.55	750.6	30.11	764.8	60	15.6	71	S	1	0.4		0	0			0	0	Clear	
St. Marks, Florida	29.90	759.4	29.92	760.0	72	22.2	95	E	10	4.5			10u		E	0.07	1.8	Light rain	
St. Paul, Minnesota	28.97	735.8	29.77	756.1	61	16.1	82	S	13	5.8		2c	8s	S	S	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.55	649.0	29.88	758.9	55	12.8	50	NW	4	1.8		0	0			0.02	0.5	Clear	
San Antonio, Texas	29.36	745.7	29.93	760.2	62	16.7	70	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.85	758.2	29.92	760.0	65	18.3	78	Calm	0	0			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.60	751.8	30.28	769.1	52	11.1	72	S	10	4.5		0	Sm'e			0	0	Clear	
Sandy Hook, New Jersey	30.19	766.8	30.22	767.6	55	12.8	61	NW	27	12.1		0	0			0	0	Clear	
San Francisco, California	29.88	758.9	29.95	760.7	53	11.7	73	W	14	6.3		0	0			0	0	Clear	
Santa Fé, New Mexico	23.35	593.1	29.89	759.2	49.5	9.7	35	E	4	1.8		Haze	2s		Calm	Inap.	Inap.		
Savannah, Georgia	29.96	761.0	30.05	763.3	66	18.9	90	NE	12	5.4			10n		E	0.39	9.9	Light rain	
Shreveport, Louisiana	29.80	756.9	30.07	763.8	63	17.2	83	Calm	0	0		0	0			0	0	Clear	
Smithville, North Carolina	30.13	765.3	30.16	766.1	65	18.3	73	N	13	5.8		5cs	2s	SW	E	0.03	0.8	Cloudy	
Springfield, Massachusetts	29.98	761.5	30.12	765.0	51	10.6	46	N	6	2.7		0	0			Inap.	Inap.	Clear.	
Stanwix, Arizona					59	15.0	48	W				0	0			0	0	Clear	
Stockton, Texas					53	11.7	59	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	51	10.6	65	NW	24	10.7		0	0			0	0	Clear.	
Toledo, Ohio	29.57	751.1	30.25	768.3	53	11.7	73	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Tucson, Arizona	27.52	699.0	30.07	763.8	68	20.0	60	SW				0	2s		SW	0	0	Fair	
Tybee Island, Georgia	30.00	762.0	30.03	762.7	74	23.3	90	NE	34	15.2			10ks		NE	0.84	21.3	Threatening	
Umatilla, Oregon	29.74	755.4			38	3.3	56	SE	8	3.6		0	0			0	0	Clear.	
Vicksburg, Mississippi	29.82	757.4	30.08	764.0	58	14.4	87	N	4	1.8		0	0			0	0	Clear	
Virginia City, Montana	24.24	615.7	29.72	754.9	36	2.2	80	Calm	0	0			10s		Calm	0.08	2.0	Cloudy	
Visalia, California	29.53	750.0	29.90	759.4	56	13.3	39	N	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.20	767.1	30.31	769.9	51	10.6	79	NW	2	0.9		0	0			0	0	Clear	
Wickenburg, Arizona					53	11.7	43	N				0	0			0	0	Clear	
Wilmington, N. Carolina	30.08	764.0	30.16	766.1	62	16.7	66	NE	12	5.4		8c	0	W		0	0	Fair	
Winnemucca, Nevada	25.58	649.7	29.94	760.5	49	9.4	50	E	3	1.3			10s		Calm	0	0	Cloudy	
Wood's Holl, Mass	30.05	763.3	30.10	764.5	52	11.1	53	NW	17	7.6		0	0			0	0	Clear	
Yankton, Dakota	28.45	722.6	29.67	753.6	63	17.2	74	S	1	0.4		5ck	5s	SW	SW	0	0	Fair	
Yuma, Arizona	29.64	752.8	29.80	756.9	65	18.3	57	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.48	748.8	29.53	750.0	31.0	—0.6	95	S	15	6.7		8c	0	NW		0	0	Fair	J. Fortescue. W. Wood.
Havana, Cuba, W. I.	29.91	759.7	29.93	760.2	78	25.6	86	SE	2.4	1.1		8ck	2s	Calm	W	0.58	14.7	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	82	27.8	83	Calm	0	0		8c	2s	NE	Calm	0	0		James Gall.
Santiago de Cuba, W. I.	29.95	760.7	29.96	761.0	81	27.2	78	N								0	0	Hazy	T. W. Beattie.
Navassa, W. I.	29.84	757.9	29.92	760.0	84	28.9		E			1					0.11	2.8	Cloudy	F. M. Everett.
St. Thomas, W. I.					84	28.9	71	NE				2c	2s	E		0	0	Hazy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.77	756.1	29.79	756.7	84	28.9	79	E				0	10ks		E			Hazy	L. V. Bigard.
Bridgetown, Barbados, W. I	29.93	760.2	29.95	760.7	84	28.9	72	E	10	4.5		10ck	10ks	E		0.20	5.1	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.94	760.5	84	28.9	75	E	2	0.9		5k	6ks	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8			67.7	19.7	80	Calm			0	5cs	5ks;s			0.16	4.1	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.: Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.: Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.93	760.2	57	13.9	53	11.7	73	SW	13	5.8			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.05	763.3			71	21.7	90	NNE	10	4.5			10		NE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.12	765.0	68	20.0	50	10.0	58	NW	4	1.8					S	0	0			Clear	
Naval Hospital, Yokohama, Japan	30.06	763.5	72	22.2	70	21.1	85	E			3		7k;ck		SE	0	0			Cloudy	
Adams, Montevideo, Uraguay	30.08†	764.0†	57	13.9	56	13.3	69	W			4–5		1		W	0	0			Squally	
Alert, N. 40° 13′, E. 141° 57′	30.20†	767.1†	69	20.6	69	20.6	75	SSE			4		0					Long	SE	Blue sky	
Alliance, Constantinople, Turkey	30.10	764.5	77	25.0	76	24.4	73	SE			2		7		Calm					Pleasant	
Ashuelot, Che-foo, China	30.01	762.2	70	21.1	69	20 6	52	NW			4–5		4		NW			Smooth		D. clouds	
Canonicus, New Orleans, La	29.97	761.2	53	11.7	71	21.7	71	N			2		1							Fair	
Colorado, New York, N. Y.	30.27	768.8	58	14.4	56	13.3	50	NW	18	8.0			3		NW	0	0			Light fog	
Despatch, Beikos Bay, Bosphorus	30.06	763.5	80	26.7	78	25.6	86	SW			3		3		Calm					Clear	
Essex, Madeira	29.96	761.0	75	23.9	76	24.4	91	WSW			4		3					Long	SW	D. clouds	
Franklin, Norfolk, Va.	30.30	769.6	58	14.4	60	15.6	100	N	9.6	4.3			2		N	0	0			Clear	
Frolic, S. 1° 12′, W. 39° 42′	30.09	764.3	82	27.8	83	28.9	83	ESE			5		5k		Calm	0	0	Heavy	S&E	D. clouds	
Gettysburg, Naples, Italy	29.79‡	756.7‡			79	26.1	100	SSW			2		9		S	Blank	Blank			D. clouds	
Kearsarge, N. 9° 23′, E. 107° 20′	30.13	765.3			85	29.4	79	SSW			2		2		S&W	0	0	Smooth		D. clouds	
Lackawana, Port Townsend, W. T.	30.05	763.3			50	10.0	72	SE			2		10		SE			Smooth		D. clouds	
Marion, Smyrna, Turkey	30.04	763.0	82	27.8	84	28.9	57	WNW			2		2		WNW	0	0	Smooth		D. clouds	
Monocacy, N. 40° 55′, E. 141° 30′	30.01	762.2	67	19.4	71	21.7	80	SSE			4		1		SSE	0	0	Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.20	767.1			70	21.1	95	NE	27	12.1			10		NE	0	0			D. clouds	
Omaha, Coquimbo, Chili	30.11	764.8	60	15.6	60	15.6	94	Calm	0	0			0			0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.02	762.5	68	20.0	67	19.4	84	Calm			0		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.24	768.1	60	15.6	55	12.8	74	NNW			6		0							Blue sky	
Palos, Ningpo, China	30.10	764.5	74	23.3	71	21.7	85	W			0–1		10		W					Cloudy	
Pensacola, Mare Island, Cal.	30.02	762.5			59	15.0	82	SW			4		0				0			Clear	
Plymouth, New York, N. Y.	30.48	774.2	58	14.4	54	12.2	80	NW			3		0							Clear	
Ranger, Nagasaki, Japan	30.05	763.3			79	26.1	78	S			3		1		W					Clear	
Rio Bravo, Brownsville, Texas	29.94	760.5			64	17.8	89	NW			1		3		E					D. clouds	
Santee, Annapolis, Md.	30.35	770.9	64	17.8	60	15.6	65	NW			2		0			0	0			Clear	
St. Louis, League Island, Pa	30.19	766.8	63	17.2	56	13.3	75	NW	5	2.2			0			0	0			Clear	
Tennessee, N. 40° 33′ 04″ E. 141° 54′ 00″	30.03	762.7	73	22.8	68	20.0	79	SSE	10	4.5			0			0	0	Long; mod'ate	S	Blue sky	
Trenton, Marseilles, France	29.80	756.9	64	17.8	63	17.2	94	NNW	10	4.5			10		N&W	0.6	15.			Raining	
Vandalia, Smyrna, Turkey	30.06	763.5	83	28.3	85	29.4	57	WNW			3		2		N&W					Hazy	
Wabash, Boston, Mass.	30.11	764.8	54	12.2	65	18.3	49	NW	17	7.6			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.53†	776.7†	57	13.9	57	13.9		Calm			0		0							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 46° 10′, W. 164° 39′			30.28*	769.1*	58	14.4	76	SSW			2		10		S&W	Smooth	WSW	Foggy	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 26° 45′, E. 129° 08′					82	27.8		SE			4		6		ESE	Smooth	SE	Raining	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 36° 58′, W. 69° 40′			29.92	760.0	66.0	18.9	66	NNE			5		k		NE	Rough	N	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 44° 27′, W. 49° 12′			29.87	758.7	58.0	14.4	88	SE			6		k		SE	Rough	SSE	Hazy	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio N. 41° 28′, W. 65° 18′			29.80*	756.9*	57	13.9	94	NW			6		10		NW	Moderate.	NNW	Cloudy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Beaufort, S. C.			29.98	761.5	70	21.1	85	NE	15	6.7			10s		NE			Overcast	Capt. James Jorgenson

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 23, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIYO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.83	757.7	80.6	27.0	63	NNW			2		2			0	0	Clear	Michel.
Algiers			29.80	756.9	86.4	30.2	44	Calm			0		4			0.079	2.0	Fair	Peter.
La Calle			29.84	757.8	82.0	27.8	63	NE			3		5			0.039	1.0	Fair	Fleury.
Tunis			29.86	758.5	84.2	29.0		E			4		2			0.020	0.5	Clear	Jacques.
Sfax			29.88	759.0	89.6	32.0		ESE			1		7			0	0	Cloudy	Husson.
Saida			29.84	758.0	78.4	25.8		NE			3		2			0.142	3.6	Clear	Millot.
Tebessa			29.90	759.4	84.2	29.0		SW			4		1			0	0	Clear	Bourgeois.
Geriville			29.83	757.7	77.7	25.4	21	W			3		3			0	0	Fair	Lemaillot.
Laghouat			29.89	759.1	86.0	30.0	21	W			4		2			0	0	Clear	François.
Biskra			29.89	759.2	97.7	36.5	37	SW			2		5			0	0	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.32	744.8	29.87	758.8	52.9	11.6	78	SW			3		10			0.063	1.6	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.04	737.7	29.81	757.1	53.6	12.0	61	W					10			0	0		Dr. Wierzbiski.
Eperies	28.91	734.4	29.79	756.7	51.6	10.9	68	N			1		10ns		Calm	0	0		Julius Mikolik.
Gratz	28.64	727.5	29.91	759.6	48.9	9.4	89	WSW			1		10			0.157	4.0		Andreas Rospini.
Hermannstadt	28.31	719.0	29.69	754.1	61.9	16.6	90	NW			3		10			0.087	2.20	Rainy	Prof. Reissenberger.
Kremsmünster	28.49	723.7	29.84	757.8	50.0	10.0	69	W			2		3			0	0		Prof. C. Wagner.
Lemberg	28.78	731.1	29.78	756.3	45.9	7.7	90	NE			1		10			0.035	0.9		Dr. T. Stanecki.
Pola	29.58	751.2	29.69	754.1	56.1	13.4	87	E			2		10s			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.50	749.3	29.78	756.4	52.9	11.6	91	N			1		10			0.126	3.20		Karl Stancel.
Trieste	29.03	752.7	29.74	755.3	50.7	10.4	89	ENE			6		10			3.724	94.6		P. Busin.
Vienna	29.15	740.5	29.85	758.1	53.2	11.8	83	W			1		8			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.38	720.8	29.89	759.3	48.9	9.4	71	SW			2		10			0.020	0.5		
Brussels	29.04	752.8	29.84	757.8	48.9	9.4	87	WNW			2		10		NW	0.182	4.62	Raining	Royal Observatory.
Furnes																			
Maeseyck	29.04	752.8	29.77	756.1	52.7	11.5	87	W			6		10			0.130	3.3		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.84	757.9	29.94	760.5	51.0	10.6		NW	13	5.8			5			0.040	1.02	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			30.03	762.7	54.9	12.7		NNW	5	2.2									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.94	760.5	55.2	12.9		NNW	8	3.6			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.07	763 8	54.7	12.6		NW			1		10					D. clouds	J. Dreyer.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)			29.90	759.4	83.5	28.6		SE			1		4?					Overcast?	Pvt. G. W. Roberts, A. H.C
Cambridge, Observatory			29.91	759.7	57.0	13.9		N			1		10					Overcast	H. Todd.
Cardington			29.91	759.7	57.4	14.1		N			1		4					D. clouds	John McLaren.
Chatham, School M. E.	29.76	755.9	29.89	759.2	54.2	12.3		NW			2		6					Overcast	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.56	725.4	30.04	763.0	50.0	10.0		NW			2		7					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.96	761.0	29.99	761.7	52	11.1		N			4		10					Overcast	J. Mac Gowan.
Dover	29.86	758.4	29.88	758.9	56	13.3		N			3		5					½ clouded	J. Costello.
Eccles, (near Manchester)			29.91	759.7	57.2	14 0		NNE	0.2	0.1			8					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.83	757.7	30.06	763.5	56.0	13.3		NNW			3		9					Overcast	The Staff.
Fort Napier, (Natal)	27.56	700.0	29.72	754.9	90.2	32.3		E			2		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.93	760.2	85	29.4		N			1		3					D. clouds	
Galway, Queen's College			30.04	763.0	58	14.4		W			1		3					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.71	754.6	29.75	755.6	74.3	23.5		W			5		7					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.75	755.6	29.95	760.7	54.5	12.5		NNE			1		4					Blue sky	D. G. Maclean.
Great Yarmouth	29.85	758.2	29.85	758.2	52	11.1		NNW			3		5					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.74	755.4	29.92	760.0	50.8	10.4		NW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.76	755.9	29.98	761.5	58.5	14.7		NW			2		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.05	763.3	56	13.3		N			4		6k					Showery	M. P. Moyle.
Holyhead	29.92	760.0	29.97	761.2	55	12.8		N			5		10					Misty	John Tilston.
Jersey	29.74	755.4	30.02	762.5	58.0	14.4		NW			3		5					D. clouds	J. Fisher.
Kew, Observatory			29.92	760.0	49.8	9.9		NNE	8	3.6			10					Raining	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			29.95	760.7	54.1	12.3		N			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.73	755.1	29.81	757.2	87.8	31.0		SE			1		8					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	29.85	758.2	29.94	760.5	53	11.7		NW			1		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.04	763.0	85.8	29.9		NE			1		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.74	755.4	29.93	760.2	57.0	13.9		WNW			3		7k;ck		NW; WNW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.39	746.5	29.92	760.0	51.5	10.8		NE			2		8					Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.92	760.0	54	12.2		WNW			1		10					Gloomy	F. Lucas
Plymouth	29.95	760.7	30.02	762.5	56.5	13.6		NW			1		10					Overcast	John Merrifield.
Roche's Point	30.08	764.0	30.12	765.0															W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			29.98	761.5	49	9.4		N	15	6.7			4					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.79	756.7	81.4	27.4		SW			1		7					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.68	753.9	29.92	760.0	55.4	13.0		N			1		7			0.007	0.18	D. clouds	W. F. Cooper.
Silloth Rectory	29.91	759.7	29.94	760.5	61.6	16.4	52	Calm			0		3			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					55.0	12.8		N			1		6					Hazy	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lewis C., (Hebr.)			29.98	761.5	51	10.6		NE			1		8					D. clouds	John Smith.
Stratfield Turgiss	29.72	754.9	29.93	760.2	54.7	12.6		NW			1		9					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.94	760.0	50	10.0		NNW			3		7					D. clouds	John Trotter.
Truro, Royal Institution			30.17	766.3	58	14.4		N			4		8					Squally	W. Newcombe.
Valencia, Observatory			30.15	765.8	54.0	12.2		NNW	14	6.3			8					Showery	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					53	11.7		NNE			4		10						Henry Mercer.
Cape Good Hope, Obs'y	30.03	762.7	30.07	763.8	58.0	14.4	69	W	21	9.4		2	8					Cloudy	The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.24	768.1	52.0	11.1	64	S			1		10n			0.10	2.5	Fine	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.97	761.2	53.0	11.7		E			1	9ck		N		0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.85	758.2	30.04	763.0	76.4	24.7	65	ENE	9.0	4.0		5	1	W	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.06	763.5	30.15	765.8	53.9	12.2	81	SE	14	6.3			7			0.02	0.5		R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.04	763.0	51	10.6		NNW			4		10			0.1	3.		J. Youngclause.
North Unst, (Shetland Is.)			29.95	760.7	47	8.3		N			6	7	5	NE					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, Queenstown, Ireland.			30.08	764.0	56	13.3		NNW			2		9			0*		D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine.																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 24′, W. 34° 43′			30.29	769.4	58	14.4		SSE			4		10			0		Overcast	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 39° 5′, W. 66° 10′			30.25	768.3	66	18.9		NNW			5		5			5	N	D. clouds	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0			67.6	19.8	95	SE			2		3cs						Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Copenhagen	29.60	751.9	29.65	753.1	48.7	9.3	65	ESE			2		5						
Fanöe	29.60	751.9	29.62	752.4	52.2	11.2	65	E			2		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.37	761.2	30.01	762.3	46.9	8.3	98	W			2		10						
Thorshavn, (Faröe)	30.00	762.1	30.04	763.0	50.5	10.3	72	NE			2		5						
Vestervig	29.42	747.2	29.59	751.5	46.0	7.8	81	ESE			2		9						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Alençon, Normal School	29.47	748.4	30.02	762.4	59.0	15	51	NW			3		10		NE	0	0	Covered	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.72	755.0	29.80	757.0	62.2	16.8	38	N			8		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.39	746.4	29.95	760.8	55.8	13.2	49	N			2		8		NW	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.66	753.4	29.95	760.6	54.7	12.6	77	WNW			1		10		WNW	0.620	0.50	Covered	Normal School.
Besançon	29.06	738.1	29.96	761.0	54.7	12.6	63				4		2		N	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.13	739.9	30.04	763.1	56.3	13.5	60	N			4		0			0	0	Clear	Normal School.
Bourges, Normal School	29.45	747.9	30.00	762.0	55.0	12.8	77	N			2		2		N	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.78	756.4	30.00	761.9	54.9	12.7	72	N			3		9		N	0	0		The Staff.
Carcassonne, Normal School	29.50	749.4	29.91	759.8	62.6	17	58	W			4		2			0.177	4.5	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.63	752.6	29.94	760.5	58.6	14.8	55	NW			3		5k		NW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.59	726.2	29.93	760.3	56.7	13.7	52	N			1		5		N	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.06	738.2	29.95	760.8	52.2	11.2	85	NE			4		5		NE	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.61	726.8	29.76	755.8	62.4	16.9	41	NW			2		2		SW	0.087	2.2	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.85	758.1	30.06	763.5	66.0	18.9	64	N			2		5		N	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.69	754.2	30.00	762.0	56.8	13.8	55	NNE			2		5		NNE	0.049	1.25	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.03	737.3	29.95	760.6	54.9	12.7	55	NE			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	29.98	761.4	30.08	763.9	60.8	16.0	59	NNW			3		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.16	740.7	29.85	758.1	57.4	14.1	72	NE			4		5		N	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.82	731.9	29.86	758.4	52.9	11.6	54	N			1		5		N	0	0	Cloudy	Normal School
Nismes, Normal School	29.78	756.4	29.98	761.4	76.1	24.5	35	N			8		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.71	754.6	29.95	760.7	56.8	13.8	57	W			1		8			0.008	0.20	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.99	761.7	30.02	762.5	64.0	17.8	43	NE			2		0			0	0	Clear.	Lt. Decante, Director.
Rouen, Normal School	29.86	758.5	29.95	760.7	59.4	15.2	57	WNW			2		5		NW	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	28.90	734.1	29.97	761.3	59.0	15	50	E			2		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.71	754.6	29.74	755.3	80.6	27										0	0		L'Abbé Marchésl.
Marseilles, Observatory			29.72	754.8	63.9	17.7	44	WNW			3–4		4			0	0		The Staff.
Mont-Louis	24.71	627.6	30.02	762.6	41.4	5.2	57	NNW	18.6	8.33			10		SW	0.701	17.8		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.67	753.5	29.94	760.5	56.3	13.5	55	NW			2–3		8		NW	0.043	1.1		Marié Davy, Director.
Perpignan			29.87	758.8	60.8	16.0	33	N	24.2	10.83			1		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.09	535.6			33.8	1.0		NW			1		5					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.32	567.0			35.2	1.8		SW			1		10			0.039	1.0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.78	756.4	29.95	760.6	59.2	15.1	56	WNW			2		4		WNW	0.008	0.2		E. Renou.
Toulouse, Observatory	29.24	742.8	29.97	761.2	56.8	13.8	58	NW			2		1			0	0		The Staff.
Tours	29.79	756.6	29.98	761.6	58.6	14.8	50	N			1		5		N	0	0		C. Marquet.
Versailles, (near Paris)			29.96	761.0	56.1	13.4	60	NW			3		10			0.045	1.15	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.08	763.9	30.10	764.5	64.4	18.0	87	E	3.6	1.6			1ks			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 358 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.: local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.52	749.8	29.69	754.1	49.6	9.8	90	S			2		10			0.080	2.26	Raining	Prof. Arndt.
Breslau	29.27	743.5	29.80	756.9	52.7	11.5	58	SSW			3		2			0	0		Royal University Obs'y.
Carlsruhe	29.45	748.0	29.87	758.8	55.8	13.2	60	SW			1		5			0	0		Albert Senz.
Cassel	29.23	742.5	29.84	757.8	52.2	11.2	77	SW			7		10	SW		0.028	0.72		Dr. H. Möhl.
Crefeld	29.60	751.9	29.76	756.0	51.8	11.0	88	W			5		10			0	0		Director Lose.
Emden	29.65	753.1	29.69	754.0	53.1	11.7	76	NNW			3		4			0.433	11.0		Prof. Prestel.
Frankfort on the Main	29.51	749.5	29.87	758.7	54.7	12.6	51	SW			2		7			0.004	0.1		Physical Society.
Friedrichshafen	28.48	723.3	29.91	759.8	51.1	10.6	52	WSW			3		0			0	0		M. Wilhelm.
Hamburg	29.54	750.3	29.61	752.1	48.4	9.1	95	Calm			0		10n			0.465	11.8	Heavy rain.	Captain F. Hegemann.
Kiel	29.60	751.9	29.62	752.3	50.0	10.0	74	NE			2		7			0.038	0.96		Prof. G. Karsten.
Königsberg, (Prussia)	29.58	751.3	29.65	753.1	51.4	10.8	67	SW											Prof. E. Luther.
Köslin			29.69	754.0	50.0	10.0		W			2		1			0.035	0.9		H. Müller.
Leipsic, Observatory	29.36	745.8	29.78	756.5	53.8	12.1	60	WSW			5		9	W		0	0		Prof. Bruhns.
Memel, Naval School	29.61	752.1	29.66	753.3	48.0	8.9	76	W			3		10ks						Reinbrecht von Skalweit.
Neufahrwasser	29.67	753.7	29.69	754.1	47.8	8.8	72	WNW			3		8			0.004	0.1	Sprinkling	A. Lothes.
Posen	29.49	749.0	29.78	756.4	56.5	13.6	53	W			8		6						Dr. Magener.
Strassburg Obs., (in Alsace	29.37	746.0	29.92	759.9	55.2	12.9	62	SW			3		6	W		0	0		Dr. Schur.
Stuttgart	28.93	734.8	29.87	758.7	54.1	12.3	48	N			1		4	W		0.035	0.9	Raining	Prof. Schoder.
Treves, (Trier)	29.24	742.7	29.76	755.8	54.5	12.5	60	NW			4		10			0.016	0.41		Prof. Flesch.
Weissenburg, (Bavaria)	28.37	720.5	29.87	758.8	50.2	10.1	56	WNW			1		9	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.67	753.6	29.72	754.9	49.8	9.9	87	SE			2		10						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.54	750.2	29.91	759.7	88.0	31.1		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29 74	755.4	29.79	756.6	83.9	28.8	71	WSW	30.0?	13.4?			1		WSW	0	0	D. clouds	
Deesa																0.85	21.6	Thunder-storm	
Bombay	29.72	754.9	29.76	755.8	82.7	28.2	93	N	21.0	9.4			10			0.06	1.5	D. clouds	
Poona	27.68	703.1	29.66	753.4	81.9	27.7	72	NW					9	NW;NE	NW	0	0	Blue sky	
Lahore	28.98	736.1	29.70	754.3	95.7	35.4	26	W	1.9	0.8			0			0.07	1.8	Lightning	
Belgaum	27.26	692.4	29.79	756.7	76.4	24.7	85	NW	3.0	1.3			9	E	E				
Bangalore																0	0		
Roorkee	28.77	730.8	29.64	752.8	96.7	35.9	23	NW	3.5	1.6			2			0	0		
Agra	29.02	737.1	29.56	750.9	98.7	37.1	33	W					4		W				
Trichinopoly																0	0	D. clouds	
Nagpur	28.72	729.4	29.74	755.5	86.1	30.1	59	Calm	1.6	0.7			9						
Madras																0	0	Blue sky	
Lucknow	29.30	744.3	29.66	753.5	95.1	35.1	31	N	1.7	0.8						0	0	Blue sky	
Allahabad	29.36	745.7	29.66	753.4	91.1	32.8	46	Calm	1.0	0.4			0			0	0	Thunder, lightn'g	
Patna	29.54	750.3	29.72	754.8	88.6	31.4	64	E	0.7	0.3			8	E	E	0	0	Thunder	
Hazaribagh	27.75	704.8	29.74	755.4	81.8	27.7	69	Calm	5.8	2.6			5			0	0	D. clouds	
Cuttack	29.67	753.6	29.75	755.7	85.2	29.6	77	SE	4.1	1.8			6			0	0	D. clouds	
Calcutta (Alipore)	29.76	755.8	29.78	756.4	84.5	29.2	82	SSW	2.0	0.9			7			0	0	D. clouds	
Goalpara	29.40	746.7	29.79	756.6	78.3	25.7	95	Calm	0.7	0.3			6		W	0.02	0.5	D. clouds	
Chittagong	29.76	755.8	29.85	758.1	82.9	28.3	87	Calm	0.1	0.1			8			0	0		
Sibsagar	29.49	749.0	29.82	757.5	79.7	26.5	86	ENE	3.1	1.4			10	W	W	1.42	36.1	D. clouds	
Rangoon																0	0	Blue sky	
Jubbulpore	28.41	721.6	29.76	755.9	86.0	30.0	60	NW	1.5	1.1									

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Uppér. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.97	558.0	29.77	756.2	38.7	3.7	68	NW			4		2	NW		0	0		Ab. Dom. Morgini.
Stelvio	21.96	557.7	29.79	756.7	33.1	0.6		NNE			1		8	SSE		0.110	2.8		Signora Ernesta Manfredi.
Udine	29.39	746.4	29.80	756.8	49.3	9.6	74	SE	8.1	3.6			10			1.260	32.0		Prof. Giovanni Clodig.
Padua	29.65	753.2	29.76	756.0	52.9	11.6	83	NE	12.5	5.6			10			0.591	15.0		Prof. Dott. Lorenzoni.
Vicenza	29.58	751.3	29.77	756.2	55.4	13.0	86	E	4.3	1.9			10	E		0.354	9.0		Conte Alm. Da Schio.
Verona	29.58	751.3	29.80	756.9	77.0	25.0	53	SE			4		10			0.020	0.5		Dott. B. Bertoncelli.
Bergamo	28.44	722.4	29.72	754.9	57.9	14.4	80	S			1		10			1.154	29.3		Prof. Trionfini Carlo.
Domodossola	28.65	727.6	29.67	753.5	66.7	19.3	41	S			6		2			0.083	2.1		Prof. Giuseppe Calza.
Milan	29.25	742.9	29.76	756.0	68.7	20.4	47	E			6		10	E		0.004	0.1		Ab. Gio. Capelli.
Pavia	29.41	746.9	29.75	755.7	54.5	12.5	86	E			6		10	E		0.996	25.3		Prof. Gio. Cantoni.
Moncalieri	28.82	731.9	29.72	754.9	66.6	19.2	44	SSE	8.7	3.9			2			0.055	1.4		Prof. P. F. Denza.
Mondovi	27.82	706.6	29.72	754.9	64.0	17.8	44	E			2		8	S		0.012	0.3		Prof. D. C. Bruno.
Porto Maurizio	29.47	748.6	29.69	754.1	68.4	20.2	56	SW			2		4			0	0		Prof. L. Vassallo.
Genoa	29.49	749.0	29.66	753.3	72.5	22.5	55	NE	1.3	0.6			8	SW		0.004	0.1		Prof. G. M. Garibaldi
Placenza	29.50	749.2	29.75	755.7	53.6	12.0	85	E	11.2	5.0			10			0	0		Dott. G. Manzi.
Parma	29.44	747.8	29.75	755.7	56.1	13.4	78	SE			6		10			0.055	1.4		Prof. P. Pigorini.
Florence	29.49	749.0	29.74	755.5	64.4	18.0	95	NNW			4		10			0.343	8.7		Cav. F. Meucci.
Leghorn	29.61	752.2	29.70	754.3	68.0	20.0	78	W	4.9	2.2			10	N		0.563	14.3		Prof. P. Monte.
Siena	28.52	724.4	29.72	754.9	63.0	17.2	92	W	2.5	1.1			10	W		0.756	19.2		Prof. L. Toscani.
Urbino	28.17	715.4	29.71	754.7	60.4	15.8	88	SW			2		10			0.532	13.5		Prof. P. Serpieri.
Pesaro	29.65	753.1	29.70	754.3	65.3	18.6	94	NW	0	0			10	W		0.378	9.6		Prof. Luigi Guidi.
Ancona	29.61	752.1	29.72	754.8	66.6	19.2	82	E			4		10			2.677	68.0		Prof. F. DeBosis.
Grosseto	29.65	753.2	29.76	756.0	74.5	23.6	76	SSW			4		10	S		0.154	3.9		Avv. P. Ponticelli.
Rome	29.57	751.0	29.74	755.4	77.9	25.5	69	SW	15.4	6.9			9			0.028	0.7		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.63	752.5	29.82	757.5	81.7	27.6	73	SSW			4		3	SW		0.031	0.8		Prof. L. Palmieri.
Lecce	29.49	749.0	29.74	755.3	81.0	27.2	65	SSW	15.4	6.9			3			0.130	3.3		Prof. C. DeGiorgi.
Cosenza	28.96	735.5	29.83	757.6	87.3	30.7	44	SE	1.8	0.8			4			0.028	0.7		Prof. F. D. Conti.
Cagliari	29.52	749.8	29.71	754.5	83.1	28.4	61	S			4		6	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.75	755.7	29.80	756.9	81.9	27.7	76	E			2		5	NE		0	0		Prof. F. Cafiero.
Palermo	29.50	749.4	29.75	755.7	86.0	30.0	42	NE	3.8	1.7			0			0.031	0.8		Prof. G. Cacciatore.
Caltanissetta	27.92	709.2	29.79	756.7	84.7	29.3	35	SW			4		3			0	0		Prof. A. Pagani.
Syracuse	29.72	755.0	29.80	756.9	84.0	28.9	70	SSW			6		7	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.28	743.8	29.84	757.9	76.1	24.5	78	WSW	1.3	0.6			10	SW		0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,1[illegible].3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokiyo, Japan.

Tokiyo (Yeddo)																			The Observatory.
Tokiyo (Yeddo) University.	29.97	761.2	30.07	763.8	69	20.6	95	Calm	0	0		9cs;ck				0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.4	30.17	766.2	54.5	12.5	73	SW	2.2	0.97		0	8ck			0.01	0.2	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594,2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069 9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.84	757.9	29.84	757.9	53.2	11.8		WNW			4					0.067	1.7		H. v d Brink.
Groningen	29.61	752.1	29.67	753.5	53.2	11.8		N			2					0.496	12.6		
Helder	29.72	755.0	29.72	755.0	53.4	11.9		NNW			4					0.079	2.0		
Utrecht	29.66	753.3	29.71	754.5	57.6	14.2	70	WNW			4		8			0.362	9.2	Very cloudy	

NOTE.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.68	753.8	29.73	755.2	48.9	9.4	51	NNW	5.6	2.5			0			0	0		
Brönö	29.72	754.8	29.76	755.8	39.6	4.2	71	NNW	18	8			8			Inap.	Inap.	Light rain	
Christiania	29.30	751.8	29.74	755.5	45.9	7.7	46	NNE	2 to 4	1 to 2			3			0	0		
Tromsö	29.78	756.3	29.82	757.4	37.0	2.8	53	Calm	0	0			0			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.97	761.2	30.16	766.0	68.0	20 0	74	ENE	11.2	5.0			2			0	0		
Campo Major	28.77	730.8	29.80	757.0	59.5	15.3	75	WNW	15.4	6.9			9	NNW		0.354	9.0		Dr. J. A. Sampaio
Funchal, (Madeira)	29.82	757.3	29.90	759.5	68.0	20.0	75		1.3	0.6			10			0.378	9.6	Raining	Dr. A. M. R. dos Santos.
Lisbon, Observatory	29.42	749.3	29.78	756.3	64.6	18.1	79	NNE	9.8	4.4			9			0.083	2.1		Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	30.04	763.1	30.11	764.9	69.1	20.6	68	NE	8.1	3.6			4			0.039	1.0		The Staff.

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India Ponta Delgada.				30.12	765.0	70.7	21.5	74	NE			4		4		NE	4		D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.34	745.2	29.76	755.9	52.3	11.3	47	SSW	9	4			2						Astronomical Obs.
Wilna	29.30	744.1	29.71	754.7	49.3	9.6	67	SSW	2	1			3						Astronomical Obs.
Dorpat	29.34	745.3	29.68	751.4	45.1	7.3	76	WSW	9	4			8						Physical Cabinet.
St. Petersburg	29.54	750.2	29.55	750.6	45.1	7.3	68	NW	7	3			6						Central Physical Obs.
Kuopio	29.24	742.6	29.56	750.9	36.0	2.2	100	NW	13	6			10						Ch. Forsten.
Zieff	29.06	738.0	29.70	754.3	44.8	7.1	94	N	9	4			10						Physical Cabinet.
Nikolaiev	29.60	751.8	29.67	753.6	76.6	24.8	65	SW	9	4			8						Kurdakof.
Kertch	29.70	754.3	29.72	754.8	78.4	25.8	79	S	9	4			6					Raining	Lagorio.
Moscow	29.17	740.8	29.71	754.7	48.6	9.2	70	S	7	3			10						Meteorological Obs.
Lugan	29.51	749.5	29.71	754.5	72.9	22.7	66	SSW	22	10			7			Blank	Blank		Meteorological Obs.
Archangel	29.26	743.2	29.28	743.7	36.7	2.6	96	NNW	13	6			10					Raining	Ogorodnikof.
Tiflis	28.60	726.4	29.95	760.6	81.3	27.4	40	E	4	2			6						Physical Observatory.
Astrakhan	30.08	763.9	29.99	761.8	73.6	23.1	44	SE	2	1			1						Sebastianof.
Kasan	29.44	747.8	29.71	754.7	45.1	7.3	93	N	2	1			10					Raining	Physical Cabinet.
Orenburg	29.43	747.5	29.80	757.0	46.4	8.0	78	NE	11	5			0						Tschernischei.
Ekaterinburg	28.87	733.2	29.80	757.0	53.2	11.8	68	SW	7	3			10						Meteorological Obs.
Nukuss	29.74	755.4	29.97	761.1	79.9	26.6	45	NNE	9	4			0						
Kasaly																			Bobrof.
Tashkend	28.41	721.6	30.08	763.9	68.4	20.2	88	Calm	0	0			2						Michelson.
Barnaul	29.40	746.7	29.90	759.5	64.9	18.3	63	NW	0	0			10						Meteorological Obs.
Yeniseisk	29.63	752.5	29.77	756.2	50.9	10.5	88	NW	2	1			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.11	764.7	30.25	768.3	54.7	12.6	59	Calm	0	0			0						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					56.3	13.5	95	E	22	10			10					Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.55	699.7			51.3	10.7	78	NE	35.1	15.67			10			0.343	8.7	Rainy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.96	761.1	30.05	763.2	78.0	25.6	87	Calm	0	0		0	3ks			0.528	13.4	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.75	755.5	29.84	758.0	70.7	21.5	72	WSW	20.1	9.0		0	7		WSW	0.197	5.0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.84	758.0	83.5	28.6	88	SE	0	0		3cs	3kn		SE	0.246	6.25	Cloudy	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. local time, and for San Fernando at midnight following. The elevation of Madrid is 655.5 meters, or 2,150.5 feet.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.69	754.0	29.72	755.0	37.4	3.0	73	NE			2		10			0	0		
Umea	29.67	753.6	29.72	754.9	39.6	4.2	58	N			2		9			0	0		
Hernosand	29.65	753.2	29.71	754.5	41.7	5.4	60	N			4		9			0	0		
Stockholm	29.48	748.9	29.66	753.4	41.7	5.4	68	NW			2		8			0.004	0.1		
Wisby	29.64	752.9	29.70	754.4	43.2	6.2	71	N			4		0			0.028	0.7		
Sub-Series.																			
Upsala	29.61	752.1	29.69	754.0	40.8	4.9	65	NNW	8.5	3.8			10		NNW	0.083	2.11		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.46	722.9	29.88	759.0	56.3	13.5	44	NE			3		1			0.004	0.1	Clear	The Observatory.
Zurich	28.29	718.5	29.93	760.1	53.4	11.9	57	W			1		1			0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —3.9 mm; Thermometer, —3.4 cent.; Relative Humidity, —21 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.83	757.7	85.8	29.9	44	SW	8	3.5			5		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.91	759.8	82.9	28.3		SE			1		0						B. Stefanidès.
Valona			29.91	759.7	83.3	28.5		SE			1		10			Blank	Blank	Covered	A. Bertrand.
Varna			29.69	754.0	84.2	29.0		E			2		5						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.78	756.4	29.90	759.4	84.2	29.0	62	W			2		1k		SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B																			Hon. J. Ferguson.
Brockville, Ontario			30.21	767.3	59	15.0		SW	5	2.2		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B			29.98	761.5	44	6.7	79	SW	9	4.0			10s		SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			29.93	760.2	51	10.6	87	N	13	5.8		5c	0	Calm		0.35	8.9	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.95	760.7	30.14	765.5	54.0	12.2	70	SW			2	0	0			0	0	Bright	James Smith, M. A.
Dalhousie, N. B	29.78	756.4			46.6	8.1	78	W			2					0	0	Threatening	H. A. Johnson.
Esquimault, B. C	29.89	759.2	29.94	760.5	49.3	9.6	100	Calm	0	0		10cs	0			†0.16	†4.1	Cloudy	W. H. Bevis.
*Father Point, Quebec			29.92	760.0	51	10.6	72	SW	12	5.4		5c	5s	W	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.02	762.5	30.08	764.0	47.1	8.4	73	W	1	0.4		10ck	0			0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			30.15	765.8	37	2.8	95	S	2	0.9		Haze	2s		S	0	0	Fair	James Stewart.
Goderich, Ontario	29.39	746.5	30.17	766.3	59.9	15.5	84	SW			1	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	29.10	739.1	30.20	767.1	53	11.7	93	S			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S			30.00	762.0	50	10.0	70	W	14	6.3		0	0			0.31	7.9	Clear	F. Allison, M. A.
Hamilton, Ontario	29.86	758.4	30.23	767.8	60.5	15.8	75	W			1					0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.30	744.2	29.32	744.7	50	10.0	71	SW			5		10n			0.79	20.1	Overcast	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.25	768.3	63	17.2	72	SW	21	9.4		0	0			0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.96	761.0	30.16	766.1	54	12.2	67	SW	11	4.9		2c	2ks			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.15	765.8	55	12.8	97	SW	5	2.2		2cs	0	SW		0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.46	748.3	30.22	767.6	46.3	7.9	96	SE			1		Fog			0	0	Smoke & fog.	J. F. Jeffers, B. A.
Port Dover, Ontario	29.53	750.0	30.22	767.6	59	15.0	82	SW	4	1.8		0	0			0	0	Clear	H. Morgan.
Port Hastings, N. S																			Peter Grant.
Port Stanley, Ontario	29.56	750.8	30.20	767.1	56	13.3	88	SW	3	1.3		0	0			0	0	Clear	M. Payne.
*Quebec, Quebec			30.10	764.5	49	9.4	85	SW	1	0.4			10n		SW	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario			30.14	765.5	44	6.7	100	Calm	0	0			Fog			0	0	Foggy	W. H. McIntyre.
St. John, N. B	29.96	761.0	30.13	765.3	46	7.8	77	Calm	0	0		5ck	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.44	747.8	30.13	765.3	57	13.9	86	SW	1	0.4		2cs	0	Calm		0	0	Clear	K. Stewart.
Stayner, Ontario																			R. J. Cole.
Stratford, Ontario	28.92	734.6	30.22	767.6	44.0	6.7	98	Calm	0	0		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	29.73	755.1	29.76	755.9	54	12.2	56	W	22	9.8		0	2ks		NW	0.04	1.0	Fair	T. C. Hill.
*Toronto, Ontario	29.84	757.9	30.23	767.8	50	10.0	93	Calm	0	0		2cs	0	W		0	0	Clear	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					52.0	11.1	86	S				10k	10s			0.88	22.4	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

†Rain-fall in 48 hours.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.06	763.5	30.29	769.4	47	8.3	85	Calm	0	0		0	0			0	0	Clear	
Alpena, Michigan	29.44	747.8	30.08	764.0	56	13.3	68	Calm	0	0		0	0			0	0	Clear	
Atlantic City, New Jersey	30.31	769.9	30.33	770.4	56	13.3	74	W	2	0.9		0	0			0	0	Clear	
Augusta, Georgia	30.06	763.5	30.25	768.3	62	16.7	83	NE	8	3.6			10s		NE	0.95	24.1	Cloudy	
Baltimore, Maryland	30.28	769.1	30.33	770.4	53	11.7	73	NW	1	0.4		Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.30	769.6	30.32	770.1	58	14.4	69	W	4	1.8		0	0			0	0	Clear	
Bismarck, Dakota	28.26	717.8	29.93	760.2	46	7.8	69	NE	2	0.9			10s		W	0	0	Cloudy	
Boise City, Idaho	27.17	690.1	29.84	757.9	36	2.2	61	S	1	0.4		1c	0	Calm		0	0	Clear	
Boston, Massachusetts	30.11	764.8	30.26	768.6	53	11.7	54	SW	6	2.7		0	0			0	0	Clear	
Brackettville, Texas	28.90	734.0	29.91	759.7	66	18.9	68	E	1	0.4		0	0			0	0	Clear	
Breckenridge, Minnesota	29.08	738.6	30.11	764.8	35	1.7	80	N	6	2.7		8c	0	W		0	0	Cloudy	
Brownsville, Texas	30.00	762.0	30.07	763.8	65	18.3	83	N	2	0.9		0	0			0	0	Clear	
Buffalo, New York	29.52	749.8	30.22	767.6	58	14.4	58	S	6	2.7		0	0			0	0	Clear	
Burlington, Vermont	29.96	761.0	30.22	767.6	53	11.7	60	S	7	3.1		0	0			0	0	Clear	
Cairo, Illinois	29.81	757.2	30.20	767.1	66	18.9	78	Calm	0	0		0	0			0	0	Clear	
Camp Grant, Arizona																0	0	Clear	
Camp Verde, Arizona	26.69	677.9	30.18	766.6	50	10.0	51	Calm	0	0		0	0			0	0	Clear	
Campo, California					35	1.7	90	Calm	0	0		0	0			0	0	Fair	
Cape Hatteras, N. Carolina	30.23	767.8	30.23	767.8	66	18.9	68	NE	14	6.3		2cs	0	SW		0	0	Clear	
Cape Henry, Virginia	30.30	769.6	30.32	770.1	66	18.9	68	Calm	0	0		0	Haze		Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.27	768.8	30.28	769.1	67	19.4	74	NE	16	7.2		8cs	0	W		0	0	Clear	
Cape May, New Jersey	30.30	769.6	30.33	770.4	63	17.2	57	W	10	4.5		0	0			0	0	Light rain	
Charleston, South Carolina	30.15	765.8	30.22	767.6	67	19.4	90	NE	14	6.3			10n		NE	0.15	3.8	Clear	
Cheyenne, Wyoming	24.03	610.4	29.97	761.2	43	6.1	83	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.38	746.2	30.06	763.5	59	15.0	76	S	12	5.4		0	0			0	0	Foggy	
Cincinnati, Ohio	29.50	749.3	30.14	765.5	57	13.9	87	SE	1	0.4		2cs	Fog	W	SE	0	0	Clear	
Cleveland, Ohio	29.52	749.8	30.24	768.1	54	12.2	61	E	10	4.5		0	0			0	0	Clear	
Concho, Texas	28.12	714.2	29.81	757.2	52	11.1	23	NE	4	1.8		0				0	0	Clear	
Corsicana, Texas	29.61	752.1	30.08	764.0	59	15.0	81	E	3	1.3		0	0			0	0	Clear	
Davenport, Iowa	29.38	746.2	30.01	762.2	63	17.2	72	SW	10	4.5		0	0			0	0	Clear	
Denison, Texas	29.32	744.7	30.11	764.8	63	17.2	77	Calm	0	0		0	0			0	0	Clear	
Denver, Colorado	24.77	629.2	29.99	761.7	45	7.2	54	SE	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.49	749.0	30.15	765.8	56	13.3	76	S	3	1.3			Fog		Calm	0	0	Foggy	
Dodge City, Kansas	27.38	695.4	29.60	751.8	61	16.1	55	S	10	4.5		2k	8s	S	S	0	0	Cloudy	
Dubuque, Iowa	29.28	743.7	29.96	761.0	63	17.2	78	S	3	1.3		5k	0	S		0	0	Fair	
Duluth, Minnesota	29.36	745.7	30.03	762.7	57	13.9	63	E	9	4.0			10s		N	0	0	Cloudy	
Eagle Pass, Texas	29.25	742.9	29.98	761.5	62	16.7	66	E	1	0.4		0	0			0	0	Clear	
Eastport, Maine	30.01	762.2	30.08	764.0	52	11.1	66	SW	4	1.8		2c	2s	NW	Calm	0	0	Fair	
Erie, Pennsylvania	29.48	748.8	30.20	767.1	57	13.9	69	S	12	5.4		0	0			0	0	Clear	
Escanaba, Michigan	29.36	745.7	30.00	762.0	60	15.6	94	S	6	2.7			10n		S	0.12	3.0	Light rain	
Florence, Arizona	28.26	717.8	29.86	758.4	80	26.7	24	SW				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.08	611.6	30.08	764.0	55	12.8	38	NW	4	1.8		5ck	0	SW		0	0	Fair	
Fort Craig, New Mexico	25.50	647.7			53	11.7	73	Calm	0	0		0	0			Inap.	Inap.	Clear	
Fort Gibson, Indian Ter.	29.54	750.3	30.06	763.5	64	17.8	73	SE	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.80	731.5	30.07	763.8	56	13.3	80	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.84	732.5	29.93	760.2	64	17.8	69	SE	2	0.9		0	1s		W	0	0	Clear	
Fort Sully, Dakota	28.31	719.1	29.96	761.0	49	9.4	63	SE	4	1.8			10s		SE	0	0	Cloudy	
Galveston, Texas	30.02	762.5	30.07	763.8	71	21.7	85	NE	6	2.7		1k	0	Calm		0	0	Clear	
Grand Haven, Michigan	29.44	747.8	30.09	764.3	54	12.2	79	S	6	2.7		1c	Sm'e	NW	Calm	0	0	Clear	
Indianapolis, Indiana	29.39	746.5	30.16	766.1	57	13.9	81	Calm	0	0		0	Sm'e			0	0	Clear	
Indianola, Texas	30.05	763.3	30.08	764.0	75	23.9	64	SE	4	1.8		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.06	763.5	30.08	764.0	73	22.8	90	NW	5	2.2		2k	0	NW		0.13	3.3	Clear	
Keokuk, Iowa	29.40	746.7	29.99	761.7	68	20.0	64	SW	6	2.7		0	Haze		Calm	0	0	Clear	
Key West, Florida	29.99	761.7	30.02	762.5	83.0	28.3	76	NE	5	2.2		Haze	5ks	Calm	NE	0.02	0.5	Fair	
Kittyhawk, North Carolina	30.31	769.9	30.34	770.6	67	19.4	56	NE	10	4.5		2c	0	NW		0	0	Fair	
Knoxville, Tennessee	29.24	742.7	30.24	768.1	59	15.0	70	NE	12	5.4		10ck	0	NW		0	0	Cloudy	
La Crosse, Wisconsin	29.18	741.2	29.89	759.2	65	18.3	73	S	6	2.7		0	0			0.02	0.5	Clear	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	60	15.6	49	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					69	20.6	65	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.17	740.9	30.00	762.0	60	15.6	88	S	2	0.9		2ck	0	Calm		0	0	Clear	
Los Angeles, California	29.57	751.1	29.90	759.4	60	15.6	76	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.63	752.6	30.19	766.8	60	15.6	87	NE	1	0.4		0	Fog		Calm	0	0	Foggy	
Lynchburg, Virginia	29.67	753.6	30.36	771.1	55	12.8	68	E	4	1.8		0	0			0	0	Clear	
Maricopa Wells, Arizona					59	15.0	44	Calm				0	0			0	0	Clear	
Marquette, Michigan	29.28	743.7	29.97	761.2	58	14.4	81	NW	7	3.1			10s		Calm	0.35	8.9	Cloudy	
Mason, Texas	28.34	719.8	30.09	764.3	55	12.8	73	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.89	759.2	30.21	767.5	65	18.3	83	SE	1	0.4		0	Fog		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.38	746.2	30.04	763.0	62	16.7	71	SW	8	3.6		2c	5ks	Calm	SW	0	0	Fair	
Mobile, Alabama	30.02	762.5	30.06	763.5	68	20.0	90	NE	8	3.6			10s		NE	Inap.	Inap	Cloudy	
Montgomery, Alabama	29.91	759.7	30.14	765.5	65.5	18.6	76	E	10	4.5			10s		E	0	0	Cloudy	
Morgantown, West Virginia	29.21	741.9	30.27	768.8	52	11.1	78	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	26.92	683.6	30.28	769.1	33	0.6	79	NW	48	21.5		0	Haze		NW	0	0	Clear	
Nashville, Tennessee	29.68	753.9	30.21	767.3	65	18.3	83	Calm	0	0		8ck	0	Calm		0	0	Fair	
New Haven, Connecticut	30.18	766.6	30.30	769.6	51	10.6	72	Calm	0	0		0	Haze			0	0	Clear	
New London, Connecticut	30.27	768.8	30.32	770.1	54	12.2	73	Calm	0	0		0	0			0	0	Clear	
New Orleans, Louisiana	29.99	761.7	30.05	763.3	71	21.7	80	N	4	1.8			10s		Calm	0	0	Cloudy	
Newport, Rhode Island	30.25	768.3	30.30	769.6	56	13.3	68	W	4	1.8		0	0			0	0	Clear	
New York, New York	30.14	765.5	30.31	769.9	60	15.6	59	W	2	0.9		0	Fog		Calm	0	0	Clear	
Norfolk, Virginia	30.28	769.1	30.34	770.6	59	15.0	87	NE	4	1.8		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.05	687.1	29.59	751.6	49	9.4	82	E	12	5.4		2k	Haze	E	Calm	0	0	Fair	
Olympia, Washington Ter.	29.94	760.5	29.98	761.5	52	11.1	86	S	3	1.3			8s		Calm	0.18	4.6	Cloudy	
Omaha, Nebraska	28.89	733.8	29.95	760.7	54	12.2	93	N	5	2.2		0	Haze		Calm	Inap.	Inap.	Clear	
Oswego, New York	29.92	760.0	30.25	768.3	54	12.2	73	SE	5	2.2		0	0			0	0	Clear	
Pembina, Dakota	29.32	744.7	30.18	766.6	33.5	0.8	90	NW	1	0.4			10s		Calm	0.04	1.0	Cloudy	
Philadelphia, Pennsylvania	29.28	769.1	30.33	770.4	59	15.0	64	Calm	0	0		0	Fog		Calm	0	0	Clear	
Phœnix, Arizona					60	15.6	34	N				0	0			0	0	Clear	
Pike's Peak, Colorado	17.92	455.2	30.13	765.3	26	— 3.3	28	SW	36	16.1		2cs	5ks	SW	SW	0	0	Cloudy	
Pioche, Nevada	23.97	608.8	29.74	755.4	46	7.8	26	S	3	1.3		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.44	747.8	30.26	768.6	46	7.8	92	NE	2	0.9		0	Fog		Calm	0	0	Clear	
Port Huron, Michigan	29.50	749.3	30.16	766.1	53	11.7	79	S	4	1.8		0	Fog		Calm	0	0	Foggy	
Portland, Maine	30.13	765.3	30.18	766.6	52	11.1	72	Calm	0	0		1k	Haze	Calm		0	0	Clear	
Portland, Oregon	29.98	761.5	30.08	764.0	54	12.2	86	S	3	1.3			10s		Calm	0	0	Cloudy	
Prescott, Arizona					45	7.2	61	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	78	25.6	95	S	12	5.4			10n		S	1.79	45.5	Light rain	
Red Bluff, California	29.59	751.6	29.95	760.7	56	13.3	45	NW	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.60	751.8	30.22	767.6	54	12.2	67	SW	6	2.7		1ck	0	Calm		0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.64	750.3	30.12	765.0	47	8.3	81	E	1	0.4		10ck	0	Calm		0	0	Cloudy	
Sacramento, California	29.86	758.4	29.94	760.5	53	11.7	66	SE	6	2.7		0	Sm'e		Calm	0	0	Smoky	
St. Louis, Missouri	29.56	750.8	30.12	765.0	62	16.7	83	S	6	2.7		0	0			0	0	Clear	
St. Marks, Florida	30.06	763.5	30.07	763.8	71	21.7	95	NE	5	2.2			10s		NE	0.35	8.9	Cloudy	
St. Paul, Minnesota	29.11	739.4	29.92	760.0	58	14.4	87	N	3	1.3			10s		Calm	Inap.	Inap.	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.54	648.7	29.87	758.7	53	11.7	48	E	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.37	746.0	29.95	760.7	83	28.3	83	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.87	758.7	29.94	760.5	61	16.1	77	E	4	1.8		5k	0	N		0	0	Fair	
Sandusky, Ohio	29.53	750.0	30.20	767.1	56	13.3	74	SW	6	2.7		0	Sm'e		Calm	0	0	Clear	
Sandy Hook, New Jersey	30.29	769.4	30.31	769.9	58	14.4	87	W	6	2.7		0	Haze			0	0	Clear	
San Francisco, California	29.91	759.7	29.98	761.5	53	11.7	86	W	8	3.6		0	0			0	0	Clear	
Santa Fé, New Mexico	23.33	592.6	29.87	758.7	54	12.2	32	SE	6	2.7		Haze	8ks		SW	0	0	Cloudy	
Savannah, Georgia	30.08	764.0	30.18	766.6	68	20.0	94	NE	8	3.6			10s		NE	0.21	5.3	Cloudy	
Shreveport, Louisiana	29.88	758.9	30.10	764.5	66	18.9	84	NE	2	0.9		0	0			0	0	Clear	
Smithville, North Carolina	30.25	768.3	30.28	769.1	65	18.3	90	N	12	5.4			10s		E	0	0	Cloudy	
Springfield, Massachusetts	30.11	764.8	30.24	768.1	51	11.7	72	Calm	0	0		0	0			0	0	Clear	
Stanwix, Arizona					54	12.2	43	SW				0	0			0	0	Clear	
Stockton, Texas					55	12.8	86	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass.	30.19	766.8	30.24	768.1	56	13.3	74	SW	12	5.4		0	0			0	0	Clear	
Toledo, Ohio	29.50	749.3	30.17	766.3	58	14.4	69	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Tucson, Arizona	27.51	698.7	30.06	763.5	66	18.9	68	SW				0	0			0	0	Clear	
Tybee Island, Georgia	30.12	765.0	30.15	765.8	72	22.2	90	NE	24	10.7			10ks		NE	0.58	14.7	Threatening	
Umatilla, Oregon	29.66	753.4			43	6.1	60	SE	8	3.6		5c	0	Calm		0	0	Fair	
Vicksburg, Mississippi	29.88	758.9	30.14	765.5	66	18.9	90	E	2	0.9			10s		Calm	0	0	Cloudy	
Virginia City, Montana	24.22	615.2	29.70	754.4	40	4.4	83	Calm	0	0			10s		Calm	0.01	0.3	Cloudy	
Visalia, California	29.60	751.8	29.97	761.2	49	9.4	71	NW	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.23	767.8	30.35	770.9	50	10.0	86	N	1	0.4		Haze	Haze	Calm	Calm	0	0	Hazy	
Wickenburg, Arizona					48	8.9	2	SW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.21	767.3	30.29	769.4	59	15.0	83	NE	8	3.6			10s		NE	0	0	Cloudy	
Winnemucca, Nevada	25.63	651.0	29.99	761.7	35	1.7	52	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Mass.	30.25	768.3	30.31	769.9	62	16.7	61	Calm	0	0		0	0			0	0	Clear	
Yankton, Dakota	28.77	730.7	30.07	763.8	45	7.2	84	W	4	1.8		2ck	0	W		0	0	Clear	
Yuma, Arizona	29.63	752.6	29.79	756.7	66	18.9	56	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.82	757.4	29.88	758.9	30.0	—1.1	95	W	16	7.2		2k	0	NW		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	80	26.7	82	SE	1.2	0.5		4k	4ks	SE	SE	0.11	2.8	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	81	27.2	82	Calm	0	0		8c	2s	NE	Calm	0	0		James Gall.
Santiago de Cuba, W. I.	29.98	761.5	29.99	761.7	82	27.8	74	Calm	0	0		0	0			0	0	Clear	T. W. Beattie.
Navassa, W. I.	29.86	758.4	29.94	760.5	85	29.4		NE			2					0	0	Cloudy	F. M Everett.
St. Thomas, W. I.					87	30.6	79	E				5c	2s	E		0	0		G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.76	755.9	29.78	756.4	82	27.8	83	E				8c	0						L. V. Bigard.
Bridgetown, Barbados, W. I	29.91	759.7	29.93	760.2	83	28.3	74	NE	2	0.9		5c	8ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.94	760.5	85	29.4	72	E	3	1.3		4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			67.2	19.6	84	Calm			0	7cs	2s			0.52	13.2	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.98	761.5	58	14.4	54	12.2	80	WSW	8	3.6			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.11	764.8			71	21.7	85	NE	14	6.3			10		NE	0.30	7.6			D. clouds	
Navy Yard, Portsmouth, N.H	30.26	768.6	66	18.9	52	11.1	60	NW	4	1.8						0	0			Clear	
Naval Hospital, Yokohama, Japan	29.99	761.7	73	22.8	72	22.2	90	NE			2		8 ;s;sm'		SW	0	0			Cloudy	
Adams, Uraguay	30.16†	766.1†	56	13 3	55	12.8	93	NNW			4		1		NW	0	0			Blue sky	
Alert, Hakodadi, Japan	30.03†	762.7†	70	21.1	70	21.1	95	S			2–6		10		SW					Raining	
Alliance, Constantinople, Turkey.	29.95	760.7	78	25.6	79	26.1	62	SW			1–2		6		S						
Ashuelot, Che-foo, China	30.20	767.1	74	23.3	65	18.3	89	NNE			4–6		4		NW			Smooth		D clouds	
Canonicus, New Orleans, La.	30.05	763.3	53	11.7	71	21.7	85	NNE			2		10		N					Cloudy	
Colorado, New York, N. Y.	30.38	771.6	62	16.7	64	17.8	48	NW	3	1.3			5		NW	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	29.98	761.5	87	30.6	84	28.9	50	SW			2–4		6		Calm			Smooth		Cloudy	
Essex, Madeira	29.92	760.0	72	22.2	70	21.1	100	Calm			0		0?					Smooth	S&W	Raining	
Franklin, Norfolk, Va.	30.40	772.1	59	15.0	63	17.2	94	W	6	2.7			2		W	0	0			Clear	
Frolic, N. 0° 13′, W. 42° 06′	30.11	764.8	82	27.8	84	28.9	87	ESE			4		1k		Calm	0	0	Moderate.	S&E	D. clouds	
Gettysburg, Naples, Italy	29.79‡	756.7‡			81	27.2	100	SSE			2		2		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 6° 34′, E. 105° 54′	30.12	765.0			85	29.4	83	SSE			2		4		S&W	0	0	Smooth		Hazy	
Lackawana, Port Townsend, W. T.	29.96	761.0			55	12.8	80	Calm			0		10		S&E					D. clouds	
Marion, Smyrna, Turkey	29.99	761.7	84	28.9	89	31.7	49	NW			2		3		Calm	0	0	smooth		D. clouds	
Monocacy, Hakodadi, Japan	29.87	758.7	74	23.3	71	21.7	100	SE			1		10		SE			Smooth		Light rain	
Monongahela, N. 40° 10′ 36″, W. 72° 41′	30.40	772.1	69	20.6	67	19.4	69	W			1		0					Smooth		Blue sky	
New Hampshire, Port Royal, S. C.	30.35	770.9			68	20.0	95	NE	16	7.2			10			0.2	5.			D. clouds	
Omaha, S. 30° 00′, W. 71° 28′	30.15	765.8	58.5	14.7	58.5	14.7	76	S	7	3.1			0			0	0	Long	S	Bright	
Onward, Callao, Peru	30.11	764.8	70	21.1	67	19.4	89	SSE			2		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.34	770.6	58	14.4	58	14.4	70	NW			1		0							Hazy	
Palos, Ningpo, China	30.13	765.3	75	23.9	72	22.2	80	ENE			1		9		Calm					Cloudy	
Pensacola, Mare Island, Cal.	30.05	763.3			59	15.0	88	SW			1		0			0	0			Clear	
Plymouth, New York, N. Y.	30.50	774.7	66	18.9	60	15.6	71	N			0–1		0							Clear	
Ranger, Nagasaki, Japan	30.20	767.1			72	22.2	85	E			0–1		10		Calm			Smooth		Cloudy	
Rio Bravo, Brownsville, Texas	29.96	761.0			65	18.3	94	NW			1		1		Calm					D. clouds	
Santee, Annapolis, Md.	30.39	771.9	64	17.8	60	15.6	65	NW			1		0			0	0			Clear	
St. Louis, League Island, Pa	30.25	768.3	61	16.1	63	17.2	83	N	2	0.9			0			0	0			Clear	
Tennessee, Hakodadi, Japan	29.95	760.7	74	23.3	70	21.1	85	Var.	20	8.9			10			0.2	5.	Smooth		Raining	
Trenton, Marseilles, France	29.86	758.4	64	17.8	64	17.8	45	NNW	11.5	5.1			1		N&W	0.04	1.0			D. clouds	
Vandalia, Smyrna, Turkey	30.02	762.5	86	30.0	86	30.0	51	Calm			0		0							Blue sky	
Wabash, Boston, Mass.	30.29	769.4	56	13.3	59	15.0	59	W	3	1.3			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.68†	779.3†			51	10.6		Calm			0									Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from: they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 46° 36′, W. 170° 12′			30.34*	770.6*	53	11.7	100	NNW			2		10		N	Small	SW	Fog and mist	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 28° 38′, E. 127° 49′					82	27.8		ESE			3		4		ESE	Smooth	ESE	Clear.	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 37° 40′, W. 64° 4′			30.06	763.5	69.0	20.6	65	N			6		k		NE	Heavy	N	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 43° 57′, W. 53° 48′			29.80	756.9	60.0	15.6	60	W			7		k		W	Heavy	WNW	Clearing	Capt. G. Meyer.
S. S. Scandinavian																			Capt. W. Richards.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio N. 43° 55′, W. 59° 15′			29.91*	759.7*	54	12.2	80	WNW			6				WNW	Small	WNW	Clear	Captain Morrison. Captain Harris.
S. S. Pennsylvania																			
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.10	764.5	70	21.1	95	NE	8	3.6			10d		NE			Cloudy	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 24, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKIYO, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.92	759.9	77.0	25.0	72	Calm			0		6			0	0	Fair	Michel.
Algiers			29.90	759.4	78.8	26.0	63	N			2		4			0	0	Fair	Peter.
La Calle			29.90	759.4	78.6	25.9	82	NE			3		4			0	0	Fair	Fleury.
Tunis			29.91	759.8	89.6	32.0													Jacques.
Sfax			29.91	759.6	87.8	31.0		SSE			3		8			0	0	Cloudy	Husson.
Saida			29.92	760.0	73.0	22.8		Calm			0		2			0	0	Clear	Millot.
Tebessa			29.91	759.6	83.7	28.7		WSW			4		0			0	0	Clear	Bourgeois.
Geriville			29.93	760.3	83.5	28.6	7	W			2		3			0	0	Fair	Lemaillot.
Laghouat			29.94	760.4	86.0	30.0	25	W			4		2			0	0	Clear	François.
Biskra			29.91	759.8	99.1	37.3	28	SW			2		4			0	0	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.36	745.7	29.91	759.6	58.5	14.7	64	SW			4		5			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.08	738.7	29.85	758.1	54.0	12.2	62	W					5			0.035	0.9		Dr. Wierzbiski.
Eperies	28.97	735.7	29.84	757.8	55.6	13.1	64	Calm			0		1cs			0	0		Julius Mikolik.
Gratz	28.67	728.3	29.92	760.0	56.1	13.4	70	WNW			3		4			0	0		Andreas Rospini.
Hermannstadt	28.45	722.7	29.88	759.0	50.7	10.4	85	NNW			1		10			0.156	3.95	Raining	Prof. Reissenberger.
Kremsmünster	28.57	725.6	29.91	759.6	51.4	10.8	70	NW			2		8			0	0		Prof. C. Wagner.
Lemberg	28.83	732.2	29.81	757.1	51.1	10.6	83	SW			2		3			0.043	1.1		Dr. T. Stanecki.
Pola	29.75	755.6	29.86	758.4	63.3	17.4	61	ENE			1		10ks			0.043	1.08		I.R.Hydrographic Office.
Szatlmar																			Johann Tamas, S. J.
Szegedin	29.60	751.9	29.88	759.0	57.9	14.4	59	S			1		6			0	0		Karl Stancel.
Trieste	29.80	757.0	29.91	759.6	60.4	15.8	81	ENE			2		7			0	0		P. Busin.
Vienna	29.19	741.5	29.88	758.9	60.1	15.6	66	W			3		4			0.003	1.6		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.46	722.8	29.98	761.5	48.2	9.0	83	WNW			1		9			0.051	1.3		Royal Observatory.
Brussels	29.76	756.0	29.97	761.1	51.3	10.7	82	W			4		9		WNW; NW	0.157	4.00		
Furnes																			
Maeseyck	29.80	756.9	29.93	760.2	52.0	11.1	89	SW			4		10			0.047	1. 2		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.04	763.0	30.14	765.5	49.0	9.4		NW	7	3.1			5			0	0	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	30.11	764.8	30.13	765.3	54	12.2		WNW			2		5					D. clouds	William McNeil.
Armagh, Observatory			30.18	766.6	52.8	11.6		NNW	1	0.4			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.12	765.0	55.2	12.9		NW	9	4.0			1					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.18	766.6	52.5	11.4		NE			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.68	753.9	30.08	764.0	52.5	11.4		N			1		7			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)			29.90	759.4	83.0	28.3		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.07	763.8	57.0	13.9		N			1		10					Overcast	H. Todd. [H. C
Cardington			30.07	763.8	56.4	13.6		N			1		4					D. clouds	John McLaren.
Chatham, School M. E	29.91	759.7	30.04	763.0	55.2	12.9		N			2		5					Fine	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.66	728.0	30.14	765.5	53.0	11.7		NE			1		6					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.12	765.0	30.15	765.8	55	12.8		SSE			3		8					D. clouds	J. Mac Gowan.
Dover	30.01	762.2	30.04	763.0	55	12.8		NNE			3		3					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.09	764.3	60.0	15.6		NE	1.0	0.4			7					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.91	759.7	30.14	765.5	58.0	14.4		ESE			1		4					D. clouds	The Staff.
Fort Napier, (Natal)	27.62	701.5	29.83	757.7	61.5	16.4		E			3		9					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.93	760.2	86	30.0		N			1		3					D. clouds	
Galway, Queen's College			30.13	765.3	57	13.9		N			1		5					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.79	756.7	29.83	757.7	68.0	20.0		NE			2		9					Showery	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.93	760.2	30.13	765.3	50.9	10.5		NNE			1		3					Blue sky	D. G. Maclean.
Great Yarmouth	30.00	762.0	30.01	762.2	52	11.1		N			4		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.90	759.4	30.07	763.8	55.3	12.9		N			2		9					Nearly o'cast	The Staff, for G. B. Airy.
Guernsey	29.87	758.7	30.07	763.8	57	13.9		NNE			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.11	764.8	60	15.6		S			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	30.08	764.0	30.13	765.3	55	12.8		NE			3		1					Blue sky	John Tilston.
Jersey	29.80	756.9	30.09	764.3	58.0	14.4		NE			2		9			Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory			30.07	763.8	54.7	12.6		N	12	5.4			10					Threatening	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			30.08	764.0	54.5	12.5		N			1		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.76	755.9	29.83	757.7	87.0	30.6		NW			1		6					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	30.02	762.5	30.12	765.0	54	12.2		Calm			0		2					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.00	762.0	84.0	28.9		NE			3		7					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.92	760.0	30.11	764.8	55.7	13.2		NNW			3		7k;d		NNE	0.011	0.28	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.56	750.8	30.09	764.3	54.0	12.2		N			2							D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.18	764.0	56	13.3		NW			1							Overcast	F. Lucas
Plymouth	30.03	762.7	30.10	764.5	59.0	15.0		Calm			0							Overcast	John Merrifield.
Roche's Point	30.11	764.8	30.16	766.1															W. Kennedy.
Saint Ann's Head	29.96	761.0	30.13	765.3	57	13.9		NNW			2		4						John C. Walker.
Sandwick Manse, (Orkneys)			30.15	765.8	48.2	9.0		NW	11	4.9			10					Overcast	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.76	755.9	85.2	29.6		SW			1		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.86	758.4	30.10	764.5	52.9	11.6		NE			1		5			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.10	764.5	30.13	765.3	57.3	14.1	56	NW			1		2			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					53.9	12.2		N			1		6					D. cloud	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C., (Hebr.)			30.11	764.8	51	10.6		SSW			1		8					D. clouds	John Smith.
Stratfield Turgiss	29.86	758.4	30.08	764.0	55.3	12.9		NW			1		8					D clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.10	764.5	54	12.2		NNW			1		7					D. clouds	John Trotter.
Truro, Royal Institution			30.11	764.8	64	17.8		NE			2		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.18	766.6	58.0	14.4		NNW	12	5.4			5					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					53	11.7		E			3		0						Henry Mercer.
Cape Good Hope, Obs'y	30.23	767.8	30.27	768.8	64.8	18.2	56	NW	7	3.1		4	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.24	768.1	52.0	11.1	52	Calm			0		10kn			0.04	1.0	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restdlrig Park			30.16	766.1	52.5	11.4		E			2					0.03	0.8	Fine	Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.5	76.1	24.5	68	E	14.1	6.3		1	4	Calm	ENE	0.02	0.5	Fine	C. Meldrum.
Melbourne, Observatory	30.14	765.5	30.23	767.8	53.0	11.7	86	SSE	14	6.3			9			0.02	0.5	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.17	766.3	51	10.6		W			3		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.04	763.0	47	8.3		N			3	6	3	NW					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria, N. 51° 22′, W. 15° 15′			30.26	768.6	56	13.3		NNE			1		7			2.5*	NNE	D. clouds	Capt. W. Watson
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 24′, W. 34° 43′			29.98	761.5	60	15.6		SSE			7		10			8	SSE	Overcast	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 39° 30′, W. 64° 25′			30.28	769.1	72	22.2		W			4					3	NW	Blue sky	Capt. Alex. Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.23	666.2			68.0	20.0	95	NE			2		10n			*0.7	*18.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation. *Rain-fall in three days.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.78	756.4	29.83	757.6	42.8	6.0	90	NE			4		7						
Fanöe	29.90	759.5	29.92	760.0	47.1	8.4	49	NE			4		3						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.80	757.0	29.85	758.1	50.5	10.3	93	W			6		8						
Thorshavn, (Faröe)	30.02	762.6	30.06	763.5	47.1	8.4	87	SW			2		9						
Vestervig	29.64	752.9	29.81	757.2	42.1	5.6	88	NNE			2		7						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.55	750.5	30.10	764.5	57.2	14	66	NE			1		10		NE	0	0	Covered	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.84	758.0	29.92	760.0	64.8	18.2	37	N			4		2		W	0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.45	747.9	30.02	762.4	53.8	12.1	72	NNW			1		10		N	0.051	1.3	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.77	756.2	30.06	763.4	51.6	10.9	74	NNW			1		8		NNW	0.047	1.20	Very cloudy	Normal School.
Besançon	29.15	740.5	30.05	763.3	51.1	10.6	83	SW			2		8		W	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.20	741.6	30.12	765.0	57.2	14	61	NW			2		5k		NW	0	0	Cloudy	Normal School.
Bourges, Normal School	29.49	749.0	30.04	762.9	56.8	13.8	58	W			1		8		SW	0	0	Very cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.83	757.7	30.05	763.3	55.9	13.3	77	N			2		10		N	Inap.	Inap.	Rainy	The Staff.
Carcassonne, Normal School	29.51	749.6	29.92	760.0	63.0	17.2	58	W			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.70	754.3	30.02	762.4	54.5	12.5	83	NW			2		10n		NW	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.65	727.6	29.98	761.6	59.0	15.0	48	N			1		10		N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.13	739.8	30.02	762.4	51.8	11	77	W			2		5		W	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.79	731.2	29.93	760.2	64.2	17.9	47	NW			4		10		NW	0	0	Covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.87	758.6	30.08	764.0	64.6	18.1	78	NW			2		5		NW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.77	756.1	30.05	763.3	58.1	14.5	61	NE			2		8		NE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.1	30.02	762.5	55.0	12.8	62	NW			2		5		W	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.00	761.9	30.10	764.4	62.6	17.0	52	N			2		10		N	0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.29	743.9	29.98	761.4	51.0	12.2	86	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.89	733.7	29.93	760.3	52.3	11.3	74	NNW			2		10		NNW	0	0	Covered	Normal School.
Nismes, Normal School	29.76	755.9	29.96	760.9	77.4	25.2	28	N			8		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.81	757.1	30.05	763.3	47.3	8.5	92	WNW			1		9kn			Inap.	Inap.	Almost cov'd	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.04	762.9	30.07	763.7	64.9	18.3	51	W			1		8		NW	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.98	761.5	30.07	763.7	56.1	13.4	59	W			1		8		NW	0.031	0.8	Very cloudy	F. Lucard, Director.
Tarbes, Normal School	28.97	735.8	30.04	763.1	58.3	14.6	58	W			1		2		E	0.12	3.	Slightly cl'dy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.1	29.89	756.8	81.0	27.2										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.87	758.6	66.0	18.9	46	NW			2		9			0	0	Cloudy	The Staff.
Mont-Louis	24.80	629.8	30.11	764.8	49.6	4.8	67	NNW	5.6	2.50			10			0.047	1.2		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.75	755.7	30.03	762.7	49.1	9.5	94	N			1		10		NNW	0.059	1.5	Raining	Marié Davy, Director.
Perpignan			29.97	761.1	61.3	16.3	41	NE	14.9	6.66			9		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.13	536.8			31.1	—0.5		W			1		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.43	569.8			33.8	1.0		W			1		10			0.228	5.8	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.88	758.9	30.04	763.1	53.8	12.1	65	NNW			1		10		NW	0	0		E. Renou.
Toulouse, Observatory	29.33	744.9	30.05	763.3	58.6	14.8	43	NNW			1		1			0	0		The Staff.
Tours	29.84	758.0	30.04	763.0	60.1	15.6	52	N			3		7		N	0	0		C. Marquet.
Versailles, (near Paris)			30.04	763.1	55.4	13.0	66	N			2		9			0	0	Almost cov.	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.15	765.8	30.18	766.5	66.2	19.0	83	N	4.0	1.8			1k			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.: local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.69	754.1	29.86	758.4	52.7	11.5	62	SW			1		7			0.200	5.08		Prof. Arndt.
Breslau	29.33	745.0	29.86	758.4	52.3	11.3	59	W			3		7					Raining	Royal University Obs'y.
Carlsruhe	29.52	749.8	29.95	760.7	52.9	11.6	85	SW			1		10			0.063	1.6		Albert Senz.
Cassel	29.36	745.8	29.97	761.2	54.7	12.6	64	W			4		5	W		0.013	0.34		Dr. H. Möhl.
Crefeld	29.73	755.2	29.89	759.3	54.5	12.5	68	SW			3		8			0.08	2.		Director Lose.
Emden	29.88	758.9	29.91	759.7	47.8	8.8	80	NNE			0		10			0	0		Prof. Prestel.
Frankfort on the Main	29.59	751.5	29.95	760.7	55.4	13.0	55	SW			1		6			0.020	0.5		Physical Society.
Friedrichshafen	28.54	724.9	29.98	761.4	52.5	11.4	65	W			4		5	W		0	0		M. Wilhelm.
Hamburg	29.77	756.2	29.84	758.0	50.0	10.0	76	NNW			1		10ks			0.008	0.2		Captain F. Hegemann.
Kiel	29.84	758.0	29.86	758.4	48.7	9.3	73	N			2		8			0.144	3.65		Prof. G. Karsten.
Königsberg, (Prussia)	29.73	755.1	29.80	756.9	48.2	9.0	65	NE											Prof. E. Luther.
Köslin			29.84	758.0	51.6	10.9		N			4		3			0	0		H. Müller.
Leipsic, Observatory	29.49	749.1	29.91	759.5	55.0	12.8	51	WNW			3		7	WNW		0	0		Prof. Bruhns.
Memel, Naval School	29.75	755.7	29.80	756.9	49.6	9.8	50	NE			2		4cs						Reinbrecht von Skalweit.
Neufahrwasser	29.81	757.2	29.83	757.6	49.6	9.8	62	ENE			3		5			0.051	1.3		A. Lothes.
Posen	29.60	751.8	29.90	759.4	47.1	8.4	75	NW			5		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.44	747.7	29.99	761.7	52.9	11.6	70	Calm			0		10	W		0.000	0.01		Dr. Schur.
Stuttgart	29.00	736.5	29.94	760.5	51.4	10.8	71	N			1		7	W		0.413	10.5	Raining	Prof. Schoder.
Treves, (Trier)	29.33	745.0	29.85	758.2	51.6	10.9	74	SW			2		10			0.004	0.11		Prof. Flesch.
Weissenburg, (Bavaria)	28.43	722.0	29.95	760.6	46.2	7.9	86	WSW			1		10	W		0.232	5.9	Raining	Dr. Von Bebber.
Wustrow, Naval School	29.95	760.7	29.99	761.7	48.9	9.4	70	E			2		7						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.46	748.2	29.83	757.6	88.9	31.6		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.74	755.3	29.78	756.5	82.9	28.3	79	WSW	36.0?	16.1?			0			0	0	Blue sky	
Deesa																			
Bombay	29.72	754.9	29.76	755.9	79.[illegible]	26.6	88	ESE	10.0	4.5			10	S	SSE	0.50	12.7	Misty	
Poona	27.70	703.9	29.69	754.0	78.7	25.9	80	NE					10		NE	1.21	30.7	Thunder-storm	
Lahore	28.97	735.8	29.69	754.1	94.1	34.5	28	W	1.1	0.5			0			0	0	Blue sky	
Belgaum	27.27	692.6	29.79	756.7	78.2	25.7	78	NW	2.0	0.9			9	E	SE			Showery	
Bangalore																			
Roorkee	28.81	731.8	29.68	753.8	94.8	34.9	27	NW	2.4	1.1						0	0		
Agra	29.13	739.8	29.67	753.5	99.7	37.6	24	N								0	0		
Trichinopoly																			
Nagpur	28.71	729.2	29.73	755.2	88.5	31.4	52	W	1.8	0.8			4			0	0	D. clouds	
Madras																			
Lucknow	29.32	744.7	29.68	753.9	95.1	35.1	39	NE	2.2	1.0						0	0	Blue sky	
Allahabad	29.37	746.1	29.67	753.7	98.7	37.1	36	Calm	0.9	0.4			0			0	0	Blue sky	
Patna	29.57	751.0	29.75	755.5	87.2	30.7	68	E	1.6	0.7			6	E	E	0	0	D. clouds	
Hazaribagh	27.77	704.2	29.76	755.9	82.0	27.8	68	ENE	7.0	3.1			9		E	0.01	0.3	Thunder-storm	
Cuttack	29.68	753.9	29.76	755.9	81.0	27.2	86	NNE					10			0.60	15.2	Overcast	
Calcutta (Alipore)	29.78	756.5	29.80	757.0	77.4	25.2	93	ESE	4.6	1.8			9			0.35	8.9	Raining	
Goalpara	29.39	746.6	29.78	756.4	81.0	27.2	83	Calm	1.0	0.4			1	E		0.04	1.0	D. clouds	
Chittagong	29.77	756.2	29.86	758.6	82.9	28.3	87	S	5.0	2.2			8			0	0		
Sibsagar	29.51	749.5	29.85	758.1	76.2	24.6	94	E	2.6	1.2			10	W	W	0.45	11.4	D. clouds	
Rangoon																			
Jubbulpore	28.40	721.2	29.74	755.3	87.5	30.8	61	NW	2.5	1.1			2	W		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.05	560.1	29.85	758.3	38.5	3.6	87	WSW			2		10	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.02	559.3	29.85	758.3	35.4	1.9		WSW			2		4	SSE		0	0		Signora Ernesta Manfredi.
Udine	29.51	749.5	29.92	759.9	60.3	15.7	41	SE	2.5	1.1			1			0.016	0.4		Prof. Giovanni Clodig.
Padua	29.76	755.9	29.87	758.7	61.7	16.5	41	NE	5.6	2.5			10			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.69	754.2	29.89	759.1	63.5	17.5	43	SE	1.8	0.8			5	W		0	0		Conte Alm. Da Schio.
Verona	29.65	753.2	29.87	758.8	70.2	21.2	44	S			2		10			0	0		Dott. B. Bertoncelli.
Bergamo	28.58	725.9	29.86	758.4	60.1	15.6	67	S			1		8			0.157	4.0		Prof. Trionfini Carlo.
Domodossola	28.82	732.1	29.84	758.0	60.8	16.0	55	S			6		8			0	0		Prof. Giuseppe Calza.
Milan	29.38	746.2	29.89	759.3	63.5	17.5	59	SE			2		8	NNW		0	0		Ab. Gio. Capelli.
Pavia	29.55	750.5	29.89	759.3	60.3	15.7	56	SE			2		8	NE		0	0		Prof. Gio. Cantoni.
Moncalieri	29.60	736 7	29.91	759.7	59.7	15.4	65	NNW	1.3	0.6			9	W		0	0		Prof. P. F. Denza.
Mondovi	27.99	710.9	29.89	759.2	57.0	13.9	60	NNW			2		9	SW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.63	752.6	29.85	758.2	66.2	19.0	53	E			8		7	W		0	0		Prof. L. Vassallo.
Genoa	29.68	753.9	29.85	758.2	63.0	17.2	59	NW	1.8	0.8			10	SW		0	0		Prof. G. M. Garibaldi
Piacenza	29.65	753.0	29.90	759.4	60.4	15.8	47	E	8.7	3.9			10	W		0.039	1.0		Dott. G Manzi.
Parma	29.54	750.2	29.85	758.1	65.5	18.6	60	ESE			4		9			0	0		Prof. P. Pigorini.
Florence	29.63	752.6	29.89	759.1	64.4	18.0	73	ENE			2		10	WSW		0.051	1.3		Cav. F Meucci.
Leghorn	29.73	755.2	29.82	757.3	64.4	18.0	74	ENE	5.6	2.5			8			0.067	1.7		Prof. P. Monte.
Siena	28.67	728.1	29.87	758.6	63.1	17.3	66	WSW	0	0			10	SW		0.283	7.2		Prof. L. Toscani.
Urbino	28.33	719.6	29.88	758.9	57 2	14.0	81	NE			2		10			1.390	35.3		Prof. P. Serpieri.
Pesaro	29.83	757.7	29.88	758.9	60.6	15.9	80	NW	32.2	14.4			10	NW		0.157	4.0		Prof. Luigi Guidi.
Ancona	29.73	756.4	29.89	759.1	45.0	7 2	72	NW			4		10	W		1.398	35.5		Prof. F. DeBosis.
Grosseto	29.76	755.8	29.87	758.6	72.7	22.6	68	NW			2		1	NNW		0.169	4.3		Avv. P. Ponticelli.
Rome	29.70	754.4	29.87	758.8	75.2	24.0	56	SW	5.6	2.5			10			0.028	0.7		Prof's. P. Secchi & L. Respighi
Naples, O. U	29.71	754.5	29.90	759.5	81.3	27.4	63	SSW			4		8	NNW		0.035	0.9		Prof. L. Palmieri.
Lecce	29.51	749.6	29.76	755.9	87.1	30.6	44	ESE	18.6	8.3			6	E		0	0		Prof. C. DeGiorgi.
Cosenza	29.03	737.4	29.90	759.5	87.1	30.6	37	NNW	0.7	0.3			2			0	0		Prof. F. D. Conti.
Cagliari	29.62	752.3	29.80	757.0	82.4	28.0	51	SE			4		8	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.77	756.1	29.82	757.3	80.4	26.9	55	ENE			2		7	ESE		0	0		Prof. F. Cafiero.
Palermo	29.57	751.1	29.82	757.4	80.1	26.7	68	NE	2.5	1.1			1			0	0		Prof. G. Cacciatore.
Caltanissetta	27.96	710.2	29.83	757.7	86.2	30.1	39	SW			4		1			0	0		Prof. A. Pagani.
Syracuse	29.74	755.4	29.82	757.3	82.4	28.0	79	SE			1		9	WSW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.35	745.6	29.91	759.7	77.5	25.3	72	WSW	1.8	0.8			9	SW		0.043	1.1		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.6 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokiyo, Japan.

Tokiyo (Yeddo)																			The Observatory.
Tokiyo (Yeddo) University	29.92	760.0	30.02	762.4	70	21.1	95	Calm	0	0			9ks		SW	0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.16	588.2	30.21	767.4	58.6	14.8	90	SE	0.5	0.21			10n		SE	0.03	0.7	Light rain	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.98	761.5	29.98	761.5	53.6	12.0		NW			4					0.406	10.3		
Groningen	29.84	757.8	28.89	759.2	50.0	10.0		N			2					0.059	1.5		
Helder	29.92	759.9	29.92	759.9	52.0	11.1		NNW			4					0.138	3.5		
Utrecht	29.80	759.1	29.93	760.3	54.9	12.7	60	WNW			3		5			0.016	0.4	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.92	760.1	29.98	761.5	47.5	8.6	63	WSW	7.6	3.4			1			0	0		
Brönö	29.97	761.3	30.01	762.3	46.0	7.8	46	Calm	0	0			1			0	0		
Christiania	29.83	757.7	29.98	761.5	46.9	8.3	37	N	0	0			5			0	0		
Tromsö	29.76	755.8	29.80	756.9	38.8	3 8	77	SW	13	6			10			0.437	11.1		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.93	760.1	30.11	764.9	68.9	20.5	76	E	12.5	5.6			1			0	0		Dr. J. A. Sampaio
Campo Major	28.86	733.1	29.88	759.0	64.4	18.0	72	ENE	6.3	2.8			10	ENE		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.80	757.0	29.88	759.0	71.6	22.0	63	S	3.8	1.7			9			0.063	1.6		Capt. D. A. de Canha.
Lisbon, Observatory	29.49	749.1	29.85	758.1	67.1	19.5	61	NE	15.0	6.7			6	SW		0.028	0.7		The Staff.
Ponta Delgada, (Azores)	30.03	762.7	30.10	764.5	73.4	23.0	56	S	1.8	0.8			5			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India Ponta Delgada.			30.11	764.9	73.4	23.0	70	S			2		6	E	NE	8		D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.34	745.2	29.76	755.9	50.9	10.5	71	W	11	5			10						Astronomical Obs.
Wilna	29.37	745.9	29.80	756.8	41.0	5.0	92	S	2	1			10					Raining	Astronomical Obs.
Dorpat	29.58	751.2	29.82	757.5	43.9	6.6	59	ENE	7	3			7						Physical Cabinet.
St. Petersburg	29.77	756.2	29.79	756.6	44.2	6.8	65	N	9	4			6						Central Physical Obs
Kuopio	29.51	749.6	29.84	758.0	37.8	3.2	83	NW	13	6			10					Raining	Ch. Forsten.
Kieff	29.21	741.9	29.84	757.9	52.7	11.5	62	Calm	0	0			7						Physical Cabinet.
Nikolaiev	29.78	756.4	29.85	758.2	53.2	11.8	88	N	9	4			10						Kurdakof.
Kertch	29.83	757.7	29.85	758.2	65.1	18.4	93	WNW	4	2			10						Lagorio.
Moscow	29.34	745.1	29.89	759.1	50.0	10.0	57	S	4	2			4						Meteorological Obs.
Lugan	29.43	747.5	29.63	752.6	57.4	14.1	97	NE	4	2			10			Blank	Blank		Meteorological Obs.
Archangel	29.70	754.3	29.72	754.8	36.7	2.6	72	NNW	18	8			10						Ogorodnikof.
Tiflis	28.50	723.8	29.83	757.6	86.7	30.4	24	N	4	2			5						Physical Observatory.
Astrakhan	29.93	760.1	29.84	758.0	76.5	24.7	57	S	9	4			8						Sebastianof.
Kasan	29.50	749.2	29.77	756.1	48.7	9.3	71	SW	2	1			8						Physical Cabinet.
Orenburg	29.48	748.7	29.85	758.3	41.4	5.2	78	W	16	7			5						Tschernischef.
Ekaterinburg	28.66	727.9	29.58	751.3	56.5	13.6	79	WSW	18	8			10						Meteorological Obs.
Nukuss	29.68	753.8	29.90	759.5	79.7	26.5	44	NNE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.37	720.7	30.03	762.8	69.4	20.8	93	Calm	0	0			0						Michelson.
Barnaul	29.48	748.9	29.99	761.8	62.2	16.8	52	NW	18	8			0						Meteorological Obs.
Yeniseisk	29.66	753.3	29.80	757.0	53.4	11.9	79	S	2	1			7						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.00	761.9	30.14	765.5	60.4	15.8	48	Calm	0	0			0						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock	30.07	763.8	30.11	764.8	51.8	10.7	79	Calm	0	0			0						
Nikolaievsk, on the Amoor					50.0	10.0	70	Calm	0	0			9						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.72	704.0			62.6	17.0	63	NE	8.2	3.67			10			0	0	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.97	761.2	30.05	763.2	78.5	25.8	86	Calm	0	0		0	2k			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.74	755.5	29.84	757.9	66.4	19.1	87	ENE	14.5	6.5			10		E	0.886	22.5	Raining	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.85	758.1	82.8	28.2	79	SE	1.2	0.55		3cs	0			0.138	3.50	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.94	760.4	29.98	761.4	41.4	5.2	54	N			2		7			0	0		
Umea	29.93	760.3	29.99	761.7	41.4	5.2	69	NE			2		9			0	0		
Hernosand	29.92	760.0	29.98	761.6	41.7	5.4	60	N			2		10			0	0		
Stockholm	29.62	752.4	29.80	756.9	41.4	5.2	69	NNE			4		7			0.106	2.7		
Wisby	29.78	756.5	29.84	758.0	43.2	6.2	71	N			4		3			0.217	5.5		
Sub-Series.																			
Upsala	29.70	755.0	29.84	757.8	41.9	5.5	69	N	12.3	5.5			8		NE	0.033	0.83		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.55	725.2	29.97	761.2	57.7	14.3	45	N			1		3			0	0	Cloudy	The Observatory.
Zurich	28.35	720.0	29.98	761.6	53.8	12.1	68	W			1		8			0.020	0.5	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —1.5 mm; Thermometer, —2.5 cent.; Relative Humidity, —20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.81	757.1	87.6	30.9	40	WSW	6	2.5			2		SW	0.118	3.0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.87	758.6	82.9	28.3		SE			1		5						B. Stefanidès.
Valona			30.00	761.9	92.3	33.5		S			1		5			0	0	Cloudy	A. Bertrand.
Varna			29.69	754.0	73.4	23.0		NW			2		8			Blank	Blank		Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.78	756.4	29.89	759.3	83.7	28.7	65	N			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.98	761.5	30.05	763.3	58.7	14.8	66	NW	4	1.8			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.16	766.1	62	16.7		SW	5	2.2		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B			30.09	764.3	52	11.1	89	SW	4	1.8		0	0			Inap.	Inap.	Clear.	G. A. Blair.
Charlottetown, P. E. Island.			30.10	764.5	56	13.3	86	Calm	0	0		5k	0			0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.92	760.0	30.11	764.8	57.5	14.2	74	NW			1	6c	0			0	0	Fair	James Smith, M. A.
Dalhousie, N. B	30.06	763.5	30.09	764.3	54.7	12.6	76	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.96	761.0	30.00	762.0	47.3	8.5	100	Calm	0	0		8cs	0			0.31	7.9	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.11	764.8	50	10.0	89	SW	25	11.2		5c	2s	W	W	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.11	764.8	30.18	766.6	55.0	12.8	84	NW	6	2.7		2ck	0	NW		0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba			29.98	761.5	47	8.3	96	E	7	3.1		5k	5n	W	W	0.140	3.56	Cloudy	James Stewart.
Goderich, Ontario	29.34	745.2	30.11	764.8	63.9	17.7	86	SW			1	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	29.04	737.6	30.12	765.0	59	15.0	94	S			1	0	0			0	0	Clear.	James Grant.
*Halifax, N. S			30.10	764.5	58	14.4	81	NW	6	2.7		0	0			0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.80	756.9	30.17	766.3	63.2	17.3	88	SW			1					0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.82	757.4	29.84	757.9	50	10.0	71	W			3	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.82	757.4	30.18	766.6	65	18.3	84	S	5	2.2		0	0			0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.92	760.0	30.12	765.0	61	16.1	59	W	18	8.0		2c	2ks	W		0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.10	764.5	55	12.8	93	E	4	1.8		0	0			0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.41	747.0	30.19	766.8	48.7	9.3	92	Calm			0	0	0			0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario	29.48	748.8	30.16	766.1	61	16.1	94	SW	3	1.3		0	0			0	0	Clear	H. Morgan.
Port Hastings, N. S	30.02	762.5	30.07	763.8	59.5	15.3		NW	8	3.6						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.51	749.5	30.16	766.1	53	11.7	86	Calm	0	0			Fog			0	0	Foggy	M. Payne.
*Quebec, Quebec			30.14	765.5	58	14.4	83	W	1	0.4			10n		W	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario			30.12	765.0	55	12.8	98	SE	2	0.9			Fog			0	0	Foggy	W. H. McIntyre.
St. John, N. B	30.01	762.2	30.18	766.6	54	12.2	*87	Calm	0	0		0	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.36	745.7	30.05	763.3	63	17.2	81	Calm	0	0		10cs	0			0	0	Cloudy	K. Stewart.
Stayner, Ontario			30.09	764.3	63	17.2	83	S	3	1.3		0	Haze			0	0	Hazy	R. J. Cole.
Stratford, Ontario	28.86	733.0	30.12	765.0	57.1	13.9	98	SW	3	1.3		1c	0	W		0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	30.04	763.0	30.07	763.8	59	15.0	62	NW	6	2.7		0	2ks		NW	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.78	756.4	30.16	766.1	55	12.8	93	W	1	0.4		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					50.0	10.0	96	SW				1k	5s			0.01	0.3	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.00	762.0	30.22	767.6	54	12.2	68	SE	3	1.3		0	0			0	0	Clear	
Alpena, Michigan	29.38	746.2	30.01	762.2	60	15.6	82	Calm	0	0		0	0			Inap	Inap.	Clear	
Atlantic City, New Jersey	30.28	769.1	30.30	769.6	63	17.2	83	W	3	1.3		0	0			0	0	Clear	
Augusta, Georgia	30.04	763.0	30.22	767.6	65	18.3	84	NE	5	2.2			10s		NE	0.10	2.5	Cloudy	
Baltimore, Maryland	30.26	768.6	30.30	769.6	57	13.9	87	SW	5	2.2		Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.26	768.6	30.29	769.4	63	17.2	83	SW	9	4.0		0	0			0	0	Clear	
Bismarck, Dakota	28.10	713.7	29.76	755.9	45	7.2	76	Calm	0	0		0	2s;sm'		Calm	0	0	Smoky	
Boise City, Idaho	27.20	690.9	29.54	757.9	41	5.0	64	Calm	0	0		2k	0	Calm		0	0	Fair	
Boston, Massachusetts	30.04	763.0	30.19	766.8	59	15.0	70	W	7	3.1		0	0			0	0	Clear	
Brackettville, Texas	28.85	732.8	29.86	758.4	66	18.9	68	E	2	0.9		0	0			0	0	Clear.	
Breckenridge, Minnesota	28.83	732.3	29.80	756.9	57	13.9	93	E	6	2.7			10s		Calm	0	0	Cloudy	
Brownsville, Texas	30.00	762.0	30.06	763.5	67	19.4	79	Calm	0	0		0	0			0	0	Clear.	
Buffalo, New York	29.46	748.3	30.15	765.8	64	17.8	72	S	5	2.2		0	0			0	0	Clear	
Burlington, Vermont	29.91	759.7	30.17	766.3	56	13.3	68	S	4	1.8		0	0			0	0	Clear.	
Cairo, Illinois	29.81	757.2	30.20	767.1	66	18.9	84	SE	6	2.7		5k	0	S		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.70	678.2	30.19	766.8	46	7.8	54	Calm				0	0			0	0	Clear	
Campo, California	27.31	693.7	29.88	758.9	35	1.7	90	E	5	2.2		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.18	766.6	30.19	766.8	72	22.2	80	NE	7	3.1		5k	0	SW		0	0	Fair	
Cape Henry, Virginia	30.24	768.1	30.27	768.8	69	20.6	79	SE	3	1.3		5c	0	S		0	0	Fair	
Cape Lookout, N. Carolina	30.22	767.6	30.23	767.8	72	22.2	85	NE	17	7.6			10ks		NE	0	0	Cloudy	
Cape May, New Jersey	30.28	769.1	30.31	769.9	64	17.8	78	S	12	5.4		0	0			0	0	Clear	
Charleston, South Carolina	30.12	765.0	30.18	766.6	69	20.6	90	NE	14	6.3		0	8s		NE	Inap.	Inap.	Fair	
Cheyenne, Wyoming	24.06	611.1	30.00	762.0	39	3.9	80	NW	8	3.6		0	0			0	0	Clear.	
Chicago, Illinois	29.38	746.2	30.05	763.3	65	18.3	84	SW	10	4.5		0	Fog		Calm	0	0	Clear	
Cincinnati, Ohio	29.52	749.8	30.16	766.1	61	16.1	82	S	1	0.4		2cs	Fog	W	S	0	0	Foggy	
Cleveland, Ohio	29.49	749.0	30.21	767.3	60	15.6	70	E	10	4.5		0	0			0	0	Clear	
Concho, Texas	28.13	714.5	29.82	757.4	60	15.6	70	SE	6	2.7		0				0	0	Clear	
Corsicana, Texas	29.62	752.3	30.08	764.0	62	16.7	88	SE	2	0.9		0	0			0	0	Clear.	
Davenport, Iowa	29.46	748.3	30.08	764.0	64	17.8	83	SW	1	0.4		1c	0	SW		0	0	Clear	
Denison, Texas	29.29	744.0	30.07	763.8	65	18.3	89	SE	5	2.2		0	0			0	0	Clear	
Denver, Colorado	24.79	629.6	30.01	762.2	55	12.8	55	NE	5	2.2		0	5s		Calm	0	0	Fair	
Detroit, Michigan	29.45	748.0	30.11	764.8	61	16.1	82	SW	6	2.7		0	Fog		Calm	0	0	Clear	
Dodge City, Kansas	27.34	694.4	29.54	750.3	64	17.8	58	S	12	5.4		5k	2s	S	S	0	0	Fair	
Dubuque, Iowa	29.34	745.2	30.03	762.7	61	16.1	88	SW	2	0.9		2k	0	SW		0	0	Fair	
Duluth, Minnesota	29.32	744.7	29.99	761.7	54	12.2	86	SE	10	4.5			10n		Calm	Inap.	Inap.	Light rain	
Eagle Pass, Texas	29.24	742.7	29.97	761.2	63	17.2	78	NE	2	0.9		1c	0	Calm		0	0	Clear.	
Eastport, Maine	30.06	763.5	30.13	765.3	60	15.6	70	W	2	0.9		5ck	Haze	NW	Calm	0	0	Fair	
Erie, Pennsylvania	29.46	748.3	30.16	766.1	63	17.2	78	S	4	1.8		2ck	Sm'e	SW		0	0	Fair	
Escanaba, Michigan	29.41	747.0	30.06	763.5	57	13.9	87	N	12	5.4			10s		N	0.07	1.8	Cloudy	
Florence, Arizona	28.27	718.0	29.87	758.7	76	24.4	34	W				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	55	12.8	27	N	4	1.8		0	8s		SW	0	0	Fair	
Fort Craig, New Mexico	25.49	647.4			60	15.6	60	NW	6	2.7			10s		NW	0	0	Threatening	
Fort Gibson, Indian Ter.	29.53	750.0	30.05	763.3	65	18.3	83	SE	3	1.3		0	0			0	0	Clear	
Fort Griffin, Texas	28.78	731.0	30.04	763.0	58	14.4	75	SE	2	0.9		0	0			0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.82	732.0	29.91	759.7	61	16.1	82	Calm	0	0		0	Fog		Calm	0	0	Clear	
Fort Sully, Dakota	28.18	715.8	29.81	757.2	53	11.7	79	NW	4	1.8			10s		Calm	0	0	Cloudy	
Galveston, Texas	30.04	763.0	30.08	764.0	73	22.8	95	NE	8	3.6		5k	0	SE		0	0	Fair	
Grand Haven, Michigan	29.42	747.3	30.05	763.3	66	18.9	86	S	10	4.5		0	0			0	0	Clear.	
Indianapolis, Indiana	29.40	746.7	30.17	766.3	63	17.2	88	SW	4	1.8		0	Sm'e			0	0	Clear	
Indianola, Texas	30.07	763.8	30.09	764.3	73	22.8	76	S	7	3.1		5k	0	S		0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.07	763.8	30.10	764.5	74	23.3	95	NE	6	2.7			10s		NE	0	0	Cloudy	
Keokuk, Iowa	29.44	747.8	30.03	762.7	70	21.1	75	SW	5	2.2		0	0			0	0	Clear	
Key West, Florida	29.98	761.5	30.02	762.5	81.0	27.2	82	E	3	1.3			10s		Calm	1.88	47.8	Cloudy	
Kittyhawk, North Carolina	30.27	768.8	30.30	769.6	70	21.1	90	NE	12	5.4		5ck	2ks	Calm	NE	0	0	Fair	
Knoxville, Tennessee	29.25	742.9	30.26	768.6	59	15.0	94	N	4	1.8		0	0			0	0	Clear.	
La Crosse, Wisconsin	29.25	742.9	29.97	761.2	61	16.1	94	S	4	1.8			Fog			0	0	Foggy	
La Mesilla, New Mexico	26.02	660.9	30.18	766.6	61	16.1	45	Calm	0	0		0	0			0	0	Clear.	
Laredo, Texas					72	22.2	67	SE	2	0.9		0	0			0	0	Clear	
Leavenworth, Kansas	29.16	740.7	29.99	761.7	62	16.7	77	S	6	2.7		0	0			0	0	Clear.	
Los Angeles, California	29.58	751.3	29.92	760.0	55	12.8	73	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.65	753.1	30.20	767.1	66	18.9	83	S	1	0.4		0	Fog		Calm	0	0	Foggy	
Lynchburg, Virginia	29.61	752.1	30.30	769.6	56	13.3	62	S	1	0.4		0	0			0	0	Clear	
Maricopa Wells, Arizona					51	10.6	37	Calm				0	0			0	0	Clear.	
Marquette, Michigan	29.34	745.2	30.02	762.5	57	13.9	87	Calm	0	0			10s		Calm	0	0	Cloudy	
Mason, Texas	28.43	722.1	30.17	766.3	61	16.1	77	Calm	0	0		0	0			0	0	Clear.	
Memphis, Tennessee	29.87	758.7	30.19	766.8	67	19.4	94	SE	2	0.9			10s		SE	Inap.	Inap.	Cloudy	
Milwaukee, Wisconsin	29.40	746.7	30.08	764.0	62	16.7	83	SW	7	3.1		1cs	Sm'e	Calm	SW	0	0	Clear	
Mobile, Alabama	30.06	763.5	30.10	764.5	69.5	20.8	92	N	11	4.9			10s		SE	Inap.	Inap.	Cloudy	
Montgomery, Alabama	29.93	760.2	30.16	766.1	69	20.6	79	E	12	5.4			10ks		SE	0	0	Cloudy	
Morgantown, West Virginia	29.20	741.7	30.26	768.6	56	13.3	80	Calm	0	0		5c	Fog	W		0	0	Fair	
Mt. Washington, N. H.	24.07	611.4	30.44	773.2	47	8.3	76	W	14	6.3		2c	Haze	W	W	0	0	Hazy	
Nashville, Tennessee	29.70	754.4	30.23	767.8	67	19.4	84	Calm	0	0		2k	0	S		0	0	Clear.	
New Haven, Connecticut	30.12	765.0	30.23	767.8	61	16.1	66	W	2	0.9		0	Haze			0	0	Clear	
New London, Connecticut	30.20	767.1	30.24	768.1	64	17.8	67	W	5	2.2		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	71	21.7	82	N	6	2.7		10k	0	N		0	0	Cloudy	
Newport, Rhode Island	30.18	766.6	30.23	767.8	61	16.1	70	SW	10	4.5		0	0			0	0	Clear	
New York, New York	30.10	764.5	30.28	769.1	57	13.9	87	SW	9	4.0		0	Sm'e			0	0	Clear	
Norfolk, Virginia	30.25	768.3	30.31	769.9	63	17.2	94	SE	3	1.3		0	Fog		Calm	0	0	Clear	
North Platte, Nebraska	26.94	684.3	29.41	747.0	60	15.6	66	NW	12	5.4			10s		NW	0	0	Cloudy	
Olympia, Washington Ter.	30.00	762.0	30.04	763.0	51	10.6	93	S	4	1.8			10n		Calm	0.28	7.1	Light rain	
Omaha, Nebraska	28.78	731.0	29.80	756.9	68	20.0	65	S	14	6.3			10s		S	0	0	Cloudy	
Oswego, New York	29.86	758.4	30.18	766.6	58	14.4	81	SE	5	2.2		0	Haze			0	0	Clear.	
Pembina, Dakota	29.11	739.4	29.94	760.5	47.5	8.6	92	N	6	2.7			10s		Calm	0.10	2.5	Cloudy	
Philadelphia, Pennsylvania	30.25	768.3	30.31	769.9	56	13.3	93	SW	6	2.7		0	Fog		Calm	0	0	Clear	
Phœnix, Arizona					59	15.0	27	N				0	0			0	0	Clear.	
Pike's Peak, Colorado	17.91	454.9	30.12	765.0	28	— 2.2	48	SW	10	4.5		0	1s		Calm	0	0	Clear	
Pioche, Nevada	24.04	610.6	29.80	756.9	47	8.3	28	NW	5	2.2		10c	0	Calm		0	0	Cloudy	
Pittsburg, Pennsylvania	29.42	747.3	30.24	768.1	52	11.1	93	S	2	0.9			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.44	747.8	30.08	764.0	63	17.2	83	S	6	2.7		0	Sm'e			0	0	Clear	
Portland, Maine	30.10	764.5	30.15	765.8	59	15.0	65	Calm	0	0		1k	Fog	Calm		0	0	Fair	
Portland, Oregon	30.04	763.0	30.14	765.5	53	11.7	93	S	1	0.4			10s		Calm	0.01	0.3	Cloudy	
Prescott, Arizona					42	5.6	68	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.06	763.5	75	23.9	76	E	8	3.6		8cs	0	Calm		0.06	1.5	Cloudy	
Red Bluff, California	29.61	752.1	29.93	761.0	58	14.4	37	NW	8	3.6		0	0			0	0	Clear	
Rochester, New York	29.55	750.6	30.15	765.8	60	15.6	65	SW	10	4.5		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.56	750.8	30.12	765.0	54.5	12.5	94	NW	1	0.4			10s		Calm	Inap.	Inap.	Cloudy	
Sacramento, California	29.87	758.7	29.96	761.0	51	10.6	78	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.58	751.3	30.14	765.5	65	18.3	84	S	4	1.8		0	0			0	0	Clear.	
St. Marks, Florida	30.10	764.5	30.12	765.0	70	21.1	95	NE	8	3.6			10s		Calm	Inap.	Inap.	Cloudy	
St. Paul, Minnesota	29.09	738.9	29.89	759.2	59	15.0	94	E	4	1.8			10n		Calm	0.16	4.1	Light rain.	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.64	651.2	29.97	761.2	49	9.4	37	NE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.37	746.0	29.96	761.0	60	15.0	77	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.87	758.7	29.94	760.5	59	15.0	81	NE	4	1.8		0	0			0	0	Clear	
Sandusky, Ohio	29.51	749.5	30.18	766.6	61	16.1	82	S	10	4.5		1k	Sm'e	Calm	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.25	768.3	30.27	768.8	61	16.1	82	SW	12	5.4		0	Haze			0	0	Clear	
San Francisco, California	29.93	760.2	30.00	762.0	54	12.2	79	S	4	1.8		Haze	Sm'e	S	S	0	0	Smoky	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	53	11.7	53	E	8	3.6		Haze	5s		SW	0.06	1.5	Fair	
Savannah, Georgia	30.08	764.0	30.17	766.3	69	20.6	95	NE	7	3.1			10s		E	0.30	7.6	Cloudy	
Shreveport, Louisiana	29.90	759.4	30.12	765.0	67	19.4	89	Calm	0	0			Fog		Calm	0	0	Foggy	
Smithville, North Carolina	30.20	767.1	30.24	768.1	70	21.1	90	N	8	3.6		10cs	0	Calm		0	0	Cloudy	
Springfield, Massachusetts	30.03	762.7	30.16	766.1	57	13.9	69	Calm	0	0		0	Fog		Calm	0	0	Fair	
Stanwix, Arizona					50	10.0	64	Calm				0	0			0	0	Clear	
Stockton, Texas					59	15.0	59	S	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass	30.14	765.5	30.20	767.1	59	15.0	81	SW	4	1.8		0	0			0	0	Hazy	
Toledo, Ohio	29.47	748.5	30.13	765.3	63	17.2	83	S	7	3.1		0	0			0	0	Clear.	
Tucson, Arizona	27.10	688.3	29.66	753.4	60	15.6	70	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.12	765.0	30.14	765.5	71	21.7	95	NE	20	8.9			10ks		NE	1.82	46.2	Threatening	
Umatilla, Oregon	29.72	754.9			55	12.8	73	N	4	1.8			10ks		Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.91	759.7	30.16	766.1	68	20.0	90	NE	2	0.9			10s		Calm	0	0	Cloudy	
Virginia City, Montana	24.29	617.0	29.77	756.1	34	1.1	61	Calm	0	0		0	0			0	0	Clear.	
Visalia, California	29.62	752.3	29.99	761.7	48	8.9	77	Calm	0	0		0	0			0	0	Clear	
Washington, D. C	30.20	767.1	30.31	769.9	55	12.8	87	Calm	0	0			Fog		S	0	0	Foggy	
Wickenburg, Arizona					47	8.3	14	W				0	0			0	0	Clear	
Wilmington, N. Carolina	30.15	765.8	30.23	767.8	66	18.9	84	NE	6	2.7		10cs	0	N		0	0	Cloudy	
Winnemucca, Nevada	25.68	652.3	30.04	763.0	34	1.1	43	E	2	0.9		0	0			0	0	Clear.	
Wood's Holl, Mass	30.19	766.8	30.24	768.1	65	18.3	83	W	10	4.5		0	0			0	0	Clear	
Yankton, Dakota	28.55	725.2	29.79	756.7	63	17.2	83	NE	3	1.3		5cs	8s	SW	SW	0.18	4.6	Cloudy	
Yuma, Arizona	29.66	753.4	29.82	757.4	60	15.6	46	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.05	763.3	30.10	764.5	28.5	—1.9	94	NW	8	3.6		4k	4s	NE	NE	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	79	26.1	86	Calm	0	0		4cs	2ks	Calm	NW	0.04	1.0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	82	27.8	87	Calm	0	0		5c	2s	NE	SE	0	0		James Gall.
Santiago de Cuba, W. I.	29.95	760.7	29.96	761.0	81	27.2	82	NNE	6	2.7		2ck	1ks	NE	NE	Blank	Blank		T. W. Beattie.
Navassa, W. I.	29.82	757.4	29.90	759.4	84.5	29.2		NE			3					0.01	0.3	Clear	F. M Everett.
St. Thomas, W. I.					84	28.9	71	Calm				2c	2s	E		0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.75	755.6	29.77	756.1	82	27.8	83	E				0	5k		E				L. V. Bigard.
Bridgetown, Barbados, W. I	29.95	760.7	29.97	761.2	83	28.3	74	E	4	1.8		5ck	5ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.98	761.5	85	29.4	72	E	3	1.3		4c	0	E		0	0	Fair	O. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			66.5	19.2	80	Calm			0		10n			1.24	31.5	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.00	762.0	59	15.0	57	13.9	81	SSW	11	4.9			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.20	767.1			72	22.2	85	NE	17	7.6			10		NE	0.44	11.2			Raining	
Navy Yard, Portsmouth, N.H.	30.21	767.3	67	19.4	56	13.3	75	SW			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	29.96	761.0	74	23.3	72.5	22.5	90	Calm			0		8k;sm'e		SSW	0	0			Cloudy	
Adams, Uraguay	29.90	759.4	60	15.6	58	14.4	94	WNW			2		3		NW	0	0			D. clouds	
Alert, Hakodadi, Japan	30.14†	765.5†	66	18.9	66	18.9	94	NE			1		9		NE					D. clouds	
Alliance, Constantinople, Turkey.	29.98	761.5	83	28.3	84	28.9	44	W			1–2		5		Calm						
Ashuelot, Che-foo, China	30.25	768.3	72	22.2	62	16.7	51	SW			2		0					Smooth		Blue sky	
Canonicus, New Orleans, La.	30.10	764.5	53	11.7	71	21.7	90	N			2		10		N&E					Cloudy	
Colorado, New York, N. Y.	30.34	770.6	65	18.3	61	16.1	77	SW	12	5.4			3		SW	0	0			Light fog	
Despatch, Beikos Bay, Bosphorus	29.95	760.7	83	28.3	76	24.4	82	NNW			3		4		Calm			Smooth		Pleasant	
Essex, Off Madeira	29.90	759.4	76	24.4	74	23.3	90	SSW			1		3					Smooth		D. clouds	
Franklin, Norfolk, Va.	30.36	771.1	62	16.7	66	18.9	94	Calm	0	0			4		Calm	0	0			Clear	
Frolic, N. 1° 05′, W. 44° 56′	30.11	764.8	83	28.3	88	31.1	76	E			3–4		3k		Calm	0	0	Moderate.	S&E	D. clouds	
Gettysburg, Naples, Italy	29.81‡	757.2‡			80	26.7	100	S			1		4		S	0	0			D. clouds	
Kearsarge, N. 3° 37′, E. 105° 01′	30.00	762.0			84	28.9	91	SSE			2		8		S&W	0	0	Smooth	S	Hazy	
Lackawana, Port Townsend, W. T.	30.04	763.0			55	12.8	80	ESE			1		6		SE					D. clouds	
Marion, Smyrna, Turkey	29.92	760.0	85	29.4	89	31.7	47	WNW			1		2		Calm	0	0	Smooth		D. clouds	
Monocacy, Hakodadi, Japan	29.94	760.5	67	19.4	65	18.3	73	NNW			1		9		NNW	0	0	Smooth		D. clouds	
Monongahela, N 39° 42′ 11″, W. 69° 56′	30.36	771.1	72	22.2	71	21.7	80	W			3		cs					Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.35	770.9			70	21.1	90	NE	18	8.0			10		NE	0.12	3.0			D. clouds	
Omaha, S. 30° 10′, W. 72° 43′	30.22	767.6	59	15.0	59	15.0	88	SE	30	13.4			1		SE	0	0	High	SE	Clear	
Onward, Callao, Peru	30.09	764.3	70	21.1	67	19.4	89	S			2		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.30	769.6	65	18.3	60	15.6	88	WNW			3		0							Blue sky	
Palos, Ningpo, China	30.22	767.6	71	21.7	69	20.6	90	Calm			0		3		S&W					Clear	
Pensacola, Mare Island, Cal.	30.08	764.0			61	16.1	82	SW			3		1		Calm	0	0			Pleasant	
Plymouth, New York, N. Y.	30.48	774.2	70	21.1	60	15.6	88	WSW			2		0							Clear	
Ranger, Nagasaki, Japan	30.24	768.1			68	20.0	79	Calm			0		0					Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.96	761.0			68	20.0	90	ENE			1		2		Calm					D. clouds	
Santee, Annapolis, Md.	30.36	771.1	66	18.9	63	17.2	78	WSW			2		2			0	0			Clear	
St. Louis, League Island, Pa	30.20	767.1	61	16.1	59	15.0	94	SW	6	2.7			3		SW	0	0			Fair	
Tennessee, Hakodadi, Japan	29.95	760.7	74	23.3	65	18.3	88	Var.					9		N&E	0.25	6.3	Smooth		Overcast	
Trenton, Marseilles, France	29.98	761.5	66	18.9	65	18.3	63	N	16	7.2			6		N	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.96	761.0	89	31.7	89	31.6	47	WNW			1–2		3		WNW					D. clouds	
Wabash, Boston, Mass.	30.21	767.3	62	16.7	60	15.6	71	W	6	2.7			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.55†	776.0†	63	17.2	55	12.8		Calm			0		0							Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 46° 34′, W. 176° 59′			30.20*	767.1*	54	12.2	80	ENE			8		10		ENE	Rough	NE	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 30° 47′, E. 131° 36′					81	27.2		SE			4		6		SE	Smooth	ESE	Cloudy	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 38° 30′, W. 56° 54′			30.13	765.3	70.0	21.1	61	N			6–7		ck		N	Rough	N	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 43° 7′, W. 57° 38′			30.09	764.3	70.0	21.1	78	WNW			5					Long	WNW	Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio, N. 46° 39′, W. 53° 02′			29.90*	759.4*	55	12.8	80	W			4				Calm	Small	SW	Cloudy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.11	764.8	71	21.7	90	NNE	5	2.2			8d		NE			Cloudy	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 25, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.96	761.0	77.0	25.0	76	Calm			0		6			0.177	4.5	Fair	Michel.
Algiers			29.96	761.0	79.2	26.2	79	N			1		8			Inap.	Inap.	Cloudy	Peter.
La Calle			29.96	761.0	77.7	25.4	80	NE			3		7			0	0	Cloudy	Fleury.
Tunis			29.99	761.7	87.8	31.0		E			4		2			0	0	Clear	Jacques.
Sfax			29.98	761.6	87.8	31.0													Husson.
Saida			29.97	761.2	72.0	22.2		ENE			2		2			0	0	Clear	Millot.
Tebessa			29.97	761.2	88.2	31.2		N			4		5			0	0	Fair	Bourgeois.
Geriville			30.00	762.1	80.6	27.0	10	SW			2		3			0	0	Fair	Lemaillot.
Laghouat			29.99	761.7	89.6	32.0	28	W			4		4			0	0	Fair	François.
Biskra			29.97	761.3	99.1	37.3	28	SSE			2		3			0	0	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.38	746.2	29.92	759.9	64.6	18.1	57	NE			4		3			0.043	1.1		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.11	739.5	29.89	759.1	51.1	10.6	80	NE					10			0.063	1.6		Dr. Wierzbiski.
Eperies	28.97	735.9	29.85	758.2	51.8	11.0	80	Calm			0		7c;s		E	0.272	6.90		Julius Mikolik.
Gratz	28.72	729.4	29.98	761.4	50.5	10.3	78	NW			3		10			0.079	2.0		Andreas Rospini.
Hermannstadt	28.44	723.3	29.90	759.5	51.1	10.6	87	N			1		10			0.270	6.85		Prof. Reissenberger.
Kremsmünster	28.67	728.3	30.02	762.6	47.8	8.8	63	W			5		8			0.472	12.0		Prof. C. Wagner.
Lemberg	28.84	732.4	29.82	757.3	51.4	10.8	73	SW			1		5			0.161	4.1		Dr. T. Stanecki.
Pola	29.80	756.8	29.91	759.6	64.6	18.1	62	WNW			2		2ks			0.089	2.26		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.61	752.0	29.88	759.0	59.7	15.4	57	Calm			0		6			0.012	0.30		Karl Stancel.
Trieste	29.84	757.8	29.94	760.4	62.6	17.0	61	W			1		0			0	0	Clear	P. Busin.
Vienna	29.30	744.1	30.00	762.0	49.1	9.5	87	WNW			3		10			0.031	0.8		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.67	728.1	30.20	767.0	48.4	9.1	59	W			1		7			0	0		Royal Observatory.
Brussels	29.99	761.8	30.20	767.0	51.4	10.8	67	WNW			3	2	3	NNW	NW	0	0		
Furnes	30.15	765.7	30.17	766.3	51.4	10.8	99	NNW			2		10			0.008	0.2		
Maeseyck	30.10	764.6	30.23	767.9	53.6	12.0	93	WNW			0		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.95	760.7	30.05	763.3	54.0	12.2		WNW	15	6.7			6			0.050	1.27	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	30.08	764.0	30.10	764.5															William McNeil.
Armagh, Observatory			30.20	767.1	56.7	13.7		WNW	7	3.1			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.15	765.8	51.4	10.8		WSW	25	11.2			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.25	768.3	56.4	13.6		NW			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.74	755.4	30.14	765.5	50.1	10.1		SW			4		10			0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)			29.90	759.4	83.0	28.3		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.21	767.3	53.4	11.9		SW			1		10s					Overcast	H. Todd. [H. C
Cardington			30.21	767.3	55.0	12.8		W			1		9					Overcast	John McLaren.
Chatham, School M. E	30.07	763.8	30.20	767.1	50.2	10.1		W			1		3					Hazy	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.79	731.3	30.28	769.1	50.4	10.2		NW			3		8					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.12	765.0	30.15	765.8	55	12.8		SSE			3		8					D. clouds	J. Mac Gowan.
Dover	30.18	766.6	30.21	767.3	53	11.7		NNW			3		2					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.15	765.8	49.8	9.9		E					10					Threatening	Thomas Mackereth.
Falmouth, Observatory	30.04	763.0	30.27	768.8	58.0	14.4		NW			1		9					Overcast	The Staff.
Fort Napier, (Natal)	27.70	703.6	29.91	759.7	68.9	20.5		E			2		9					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.92	760.0	85	29.4		N			2		3					D. clouds	
Galway, Queen's College			30.12	765.0	58	14.4		N			1		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.90	759.4	29.94	760.5	77.2	25.1		W			3		9					Overcast	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.88	758.9	30.08	764.0	55.7	13.2		W			3		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.17	766.3	30.18	766.6	52	11.1		NNW			2		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.04	763.0	30.22	767.6	52.4	11.3		SW			1		10					Misty	The Staff, for G. B. Airy.
Guernsey	30.01	762.2	30.22	767.6	60	15.6		WSW			1		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.31	769.9	62	16.7		N			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	30.12	765.0	30.17	766.3	55	12.8		WNW			3		10					Overcast	John Tilston.
Jersey	29.96	761.0	30.25	768.3	59.2	15.1		SW			2		9			Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory			30.22	767.6	51.8	11.0		W	6	2.7			10s					Overcast	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			30.20	767.1	49.9	9.9		SW			1		10					Snowing?	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.99	761.7	87.2	30.7		NW			1		4					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	29.95	760.7	30.05	763.3	52	11.1		Calm			0		10					Raining	W. D. Penny.
Nassau, (Bahamas)			29.87	758.7	84.1	28.9		NW			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.00	762.0	30.19	766.8	50.7	10.4		SW			1		10cs		Calm	0.013	0.33	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.66	753.4	30.18	766.6	51.0	10.6		WSW			1		10					Light fog	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.20	767.1	54	12.2		SW			1		10					Overcast	F. Lucas
Plymouth	30.17	766.3	30.24	768.1	58.1	14.5		Calm			0		10					Overcast	John Merrifield.
Roche's Point	30.21	767.3	30.25	768.3															W. Kennedy.
Saint Ann's Head	30.07	763.8	30.23	767.8	56	13.3		WNW			2		10					Showery	John C. Walker.
Sandwick Manse, (Orkneys)			30.03	762.7	50.2	10.1		NNW	19	8.5			5					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.73	755.1	77.8	25.4		S			1		9			Blank	Blank	Gloomy	Sergt. W. H. Lyne.
Sheffield	29.93	760.2	30.17	766.3	51.8	11.0		WSW			1		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.07	763.8	30.10	764.5	56.9	13.9	80	W			2		6			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					49.3	9.6		W			1		10					Foggy	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C., (Hebr.)			30.07	763.8	55	12.8		NNW			2		8					D. clouds	John Smith.
Stratfield Turgiss	30.01	762.2	30.23	767.8	51.5	10.8		N			1		9					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.00	762.0	52	11.1		NNW			3		8					Showery	John Trotter.
Truro, Royal Institution			30.25	768.3	62	16.7		NW			4		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.30	769.6	56.9	13.8		NNW	14	6.3			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		NW			3		0						Henry Mercer.
Cape Good Hope, Obs'y	30.19	766.8	30.23	767.8	65.1	18.4	67	SE	9	4.0		1	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.34	770.6	52.5	11.4	88	Calm			0		10kn			0.01	0.3	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.09	764.3	55.2	12.9		W			3		10k			0	0	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.91	759.7	30.10	764.5	76.1	24.5	69	E	18.6	8.3		0	4		ENE	0.01	0.3	Fine	C. Meldrum.
Melbourne, Observatory	30.31	769.9	30.40	772.1	53.1	11.7	79	SSE	14	6.3			10			0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.15	765.8	54	12.2		N			1	10	5	N		0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.93	760.2	50	10.0		NW			4	4	8	NW		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria, N. 50° 26′, W. 23° 25′			30.33	770.4	59	15.0		SE			2		4		SW	*2.5	WSW	D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Moulind.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 24′, W. 34° 45′			29.93	760.2	61	16.1		SE			6		7			6	SW	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 40° 0′, W. 62° 20′			30.30	769.6	71	21.7		WNW			4					2	NW	Blue sky	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.16	664.4			67.6	19.8	95	SE			2		6cs			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation. *Rain-fall in three days.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.03	762.7	30.08	763.9	44.6	7.0	55	N			4		0						
Fanöe	30.11	764.7	30.13	765.2	48.6	9.2	57	W			4		3						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.75	755.6	29.79	756.7	52.5	11.4	97	SW			6		10					Raining	
Thorshavn, (Faröe)	30.03	762.8	30.07	763.7	52.0	11.1	67	NW			4		10						
Vestervig	29.89	759.2	30.06	763.5	48.9	9.4	54	S			2		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.70	754.4	30.26	768.5	57.2	14	37	E			1		2		NE	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	29.97	761.2	30.05	763.2	61.7	16.5	46	N			8				W	0	0	Light clouds	Mr. Giraud, Director.
Bar-sur-Seine																			C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.94	760.5	30.23	767.8	55.6	13.1	52	NW			3		8		NNW	0	0	Very cloudy	Normal School.
Besançon	29.30	744.3	30.21	767.4	52.0	11.1	74	SE			3		2		N	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.34	745.1	30.25	768.4	51.8	11	68	N			6		5ck		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.65	753.1	30.21	767.3	51.8	11	79	NW			1		2		NW	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.98	761.6	30.21	767.2	59.9	15.5	60	N			2		6k		N	0	0		The Staff.
Carcassonne, Normal School	29.72	754.8	30.12	765.0	60.1	15.6	64	W			2		5			0	0	Cloudy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.89	759.3	30.22	767.5	55.0	12.8	79	NW			2		5k		NW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.80	731.4	30.17	766.3	52.3	11.3	57	N			1		8		N	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.33	744.9	30.23	767.8	50.4	10.2	72	W			2		5		W	0.020	0.5	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.87	733.3	30.01	762.3	65.8	18.8	37	NW			2		5		NW	0	0	½ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.03	762.7	30.24	768.2	60.8	16	41	NW			2		5		NW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.95	760.6	30.26	768.5	54.9	12.7	56	NE			2		5		NE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.28	743.7	30.21	767.2	51.8	11	80	N			2		2			0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	30.17	766.2	30.26	768.7	64.8	18.2	43	SSW			3		5		SW	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.47	748.4	30.09	764.3	54.1	12.3	74	NE			2		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.07	738.3	30.12	765.0	52.3	11.3	63	NNW			2		5		NNW	0	0	Cloudy	Normal School.
Nismes, Normal School	29.78	756.5	29.98	761.5	70.5	21.4	44	N			8		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.97	761.3	30.21	767.4	54.7	12.6	53	NW			1		8			0.089	2.27	Very cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.21	767.3	30.24	768.1	64.0	17.8	39	NE			2		8		E	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.15	765.9	30.24	768.1	59.4	15.2	48	N			1		5		N	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.07	738.4	30.15	765.8	57.9	14.4	83	E			1		8		W	0	0	Very cloudy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.75	755.6	29.78	756.3	80.6	27										0.47	12.		L'Abbé Marchésl.
Marseilles, Observatory			29.95	760.8	65.8	18.8	47	W			3		4			0	0		The Staff.
Mont-Louis	24.91	632.8	30.23	767.8	45.3	7.4	59	SW	13.0	5.83			10		SW	0.031	0.8		Mr. Falgnère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.93	760.1	30.20	767.1	55.0	12.8	55	N			2-3		6		N	0.004	0.1		Marié Davy, Director.
Perpignan			30.10	764.4	62.6	17.0	34	N	14.9	6.66			7		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.27	540.2			34.3	1.3		W			2		10					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.54	572.4			37.4	3.0		W			3		10			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.04	763.0	30.21	767.2	54.1	12.3	62	NNW			1		10		N	0	0	Covered	E. Renou.
Toulouse, Observatory	29.45	748.1	30.18	766.6	58.8	14.9	60	NW			3		6			0	0		The Staff.
Tours	30.02	762.4	30.21	767.4	57.2	14.0	53	N			1		5		N	0	0		C. Marquet.
Versailles, (near Paris)			30.21	767.4	55.2	12.8	57	NNW			1		7			0.006	0.14	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.17	766.2	30.19	766.9	63.1	17.3	77	N	2.9	1.3			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.78	756.4	29.96	761.0	42.4	5.8	94	W			2		10			0.389	9.88		Prof. Arndt.
Breslau	29.42	747.2	29.95	760.6	43.5	6.4	89	WNW			3		10			0.215	5.46	Sprinkling	Royal University Obs'y.
Carlsruhe	29.72	755.0	30.16	766.1	51.4	10.8	53	NW			1		1			0	0		Albert Senz.
Cassel	29.59	751.6	30.20	767.0	48.6	9.2	50	N			5		8	NW		0.039	1.00		Dr. H. Möhl.
Crefeld	30.01	762.2	30.17	766.3	53.4	11.9	47	N			1		6k			0.31	8		Director Lose.
Emden	30.16	766.0	30.19	766.9	50.0	10.0	56	N			3		1			0.079	2.0		Prof. Prestel.
Frankfort on the Main	29.83	757.6	30.20	767.1	51.1	10.6	33	NNW			3		7			0.138	3.5		Physical Society.
Friedrichshafen	28.71	729.3	30.17	766.3	49.3	9.6	70	NNE			4		9	WNW				Light rain	M. Wilhelm.
Hamburg	30.04	763.0	30.11	764.8	47.7	8.7	59	NNE			4		5k			0.016	0.4	Fair	Captain F. Hegemann.
Kiel	30.10	764.5	30.11	764.9	45.9	7.7	71	NNE			5		4			0.048	1.22		Prof. G. Karsten.
Königsberg, (Prussia)	29.84	757.9	29.91	759.7	49.3	9.6	59	N											Prof. E. Luther.
Köslin			30.00	762.0	49.6	9.8		SW			2		4			0.098	2.5		H. Müller.
Leipsic, Observatory	29.63	752.6	30.06	763.5	42.1	5.6	94	WNW			4		10	NW		0.098	2.5	Rainy	Prof. Bruhns.
Memel, Naval School	29.86	758.4	29.91	759.6	46.4	8.0	73	SE			3		10ks					Raining	Reinbrechtvon Skalweit.
Neufahrwasser	29.95	760.8	29.99	761.8	49.6	9.8	59	N			3		5			0.083	2.1		A. Lothes.
Posen	29.58	751.3	29.88	758.9	41.7	5.4	94	W			2		10						Dr. Magener.
Strassburg Obs., (in Alsace	29.63	752.7	30.19	766.9	51.4	10.8	58	N			2		6	NW		0.005	0.13		Dr. Schur.
Stuttgart	29.18	741.1	30.13	765.4	49.5	9.7	53	W			3		2	W		0	0		Prof. Schoder.
Treves, (Trier)	29.54	750.3	30.07	763.6	52.5	11.4	44	NW			1		6			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.60	726.5	30.13	765.3	46.8	8.2	48	NW			3		5	W		0.079	2.0		Dr. Von Bebber.
Wustrow, Naval School	30.06	763.5	30.09	764.3	47.1	8.4	66	NE			3		10						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedricashafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.46	748.3	29.83	757.7	91.4	33.6		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29 71	754.6	29.76	755.9	82.6	28.1	79	SW	29.0?	13.0?			0			0	0	Blue sky	
Deesa																			
Bombay	29.80	756.8	29.84	757.8	81.1	27.3	77	ESE	19.0	8.5			10		SE	0.01	0.3	Thunder-storm	
Poona	27.77	705.4	29.76	755.9	80.5	26.9	69	N					10	ENE	NE	0.03	0.8	Thunder	
Lahore	28.97	735.8	29.69	754.0	94.6	34.8	29	Calm	1.3	0.6			0			0	0	Blue sky	
Belgaum	27.29	693.2	29.84	757.9	74.1	23.4	90	W	14.0	6.3			10		E;NNW	0.03	0.8	Threatening	
Bangalore																			
Roorkee	28.81	731.7	29.68	753.8	94.8	34.9	28	NW	2.9	1.3						0	0		
Agra	29.12	739.8	29.67	753.5	98.7	37.1	23	W								0	0		
Trichinopoly																			
Nagpur	28.73	729.6	29.76	755.8	86.6	30.3	55	N	1.0	0.4			6			0	0	D. clouds	
Madras																			
Lucknow	29.32	744.8	29.68	754.0	94.1	34.5	41	ENE	3.1	1.4			1			0	0	D. clouds	
Allahabad	29.38	746.1	29.68	753.8	92.7	33.7	52	Calm	1.7	0.8			0			0	0	Blue sky	
Patna	29.56	750.8	29.74	755.4	87.6	30.9	65	SE	0.8	0.4			6	E	E	0	0	D. clouds	
Hazaribagh	27.77	705.2	29.77	756.2	79.0	26.1	77	SW	7.2	3.2			9					Thunder-storm	
Cuttack	29.70	754.4	29.78	756.4	83.6	28.7	73	E	4.1	1.8			4			0	0	D. clouds	
Calcutta (Alipore)	29.80	756.9	29.82	757.5	80.7	27.1	90	S	3.0	1.3			3			0.06	1.5	Raining	
Goalpara	29.46	746.8	29.79	756.7	79.1	26.2	85	Calm	1.0	0.4			2			0.37	9.4	D. clouds	
Chittagong	29.80	757.0	29.90	759.3	81.9	27.7	91	Calm	3.5	1.6			3			0	0	Blue sky	
Sibsagar	29.54	750.4	29.88	758.9	77.5	25.3	91	ENE	4.3	1.9			10	W	W	1.07	27.2	D. clouds	
Rangoon																			
Jubbulpore	28.39	721.0	29.72	755.0	89.0	31.7	58	SE	1.7	0.8			4	E		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.12	561.8	29.92	760.0	36.3	2.4	69	N			4		2	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.09	561.1	29.93	760.1	30.7	— 0.7		NNE			2		6	ESE		0	0		Signora Ernesta Manfredi.
Udine	29.54	750.2	29.95	760.6	62.8	17.1	40	W	1.3	0.6			5			0	0		Prof. Giovanni Olodig.
Padua	29.79	756.6	29.90	759.4	63.3	17.4	35	WNW	4.9	2.2			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.71	754.5	29.89	759.2	55.4	13.0	86	E	4.3	1.9			10	E		0.354	9.0		Conte Alm. Da Schio.
Verona	29.69	754.1	29.91	759.7	70.5	21.4	50	NE			1		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.61	726.7	29.89	759.2	63.3	17.4	64	SSW			1		1			0	0		Prof. Trionfini Carlo.
Domodossola	28.86	733.1	29.88	759.0	64.0	17.8	36	S			6		1			0	0		Prof. Giuseppe Calza.
Milan	29.41	747.0	29.93	760.3	61.2	16.2	58	W			2		1	SW		0	0		Ab. Gio. Capelli.
Pavia	29.59	751.6	29.94	760.4	62.8	17.1	52	W			2		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.03	737.3	29.93	760.3	64.0	17.8	37	NNE	2.5	1.1			1			0	0		Prof. P. F. Denza.
Mondovi	28.02	711.7	29.92	760.0	61.7	16.5	39	NW			4		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.73	755.2	29.95	760.7	68.5	20.3	37	E			2		7	SW		0	0		Prof. L. Vassallo.
Genoa	29.75	755.6	29.92	759.9	69.4	20.8	37	W	2.5	1.1			0			0	0		Prof. G. M. Garibaldi
Piacenza	29.69	754.0	29.94	760.5	63.3	17.4	42	N	3.8	1.7			0			0	0		Dott. G. Manzi.
Parma	29.59	751.6	29.90	759.5	66.9	19.4	56	NW			2		1			0	0		Prof. P. Pigorini.
Florence	29.69	754.0	29.94	760.5	69.8	21.0	43	W			2		5			0.028	0.7		Cav. F. Meucci.
Leghorn	29.80	756.9	29.88	759.0	68.0	20.0	61	NW	1.8	0.8			2			0	0		Prof. P. Monte.
Siena	28.80	731.5	30.00	762.0	56.1	13.4	38	ENE	14.3	6.4			1	NE		0	0		Prof. L. Toscani.
Urbino	28.43	722.1	29.98	761.4	58.1	14.5	64	NE			2		7			0.354	9.0		Prof. P. Serpieri.
Pesaro	29.89	759.3	29.94	760.5	63.5	17.5	69	NW	19.2	8.6			5			0.079	2.0		Prof. Luigi Guidi.
Ancona	29.84	757.8	29.94	760.5	59.0	15.0	68	W			4		8			0.248	6.3		Prof. F. DeBosis.
Grosseto	29.76	755.8	29.87	758.6	74.5	23.6	61	N			2		4	NW		0	0		Avv. P. Ponticelli.
Rome	29.77	756.2	29.95	760.6	75.6	24.2	47	W	3.1	1.4			9			0.024	0.6		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.73	755.1	29.93	760.1	79.5	26.4	50	WSW			4		9	SW		0	0		Prof. L. Palmieri.
Lecce	29.56	750.9	29.81	757.2	79.3	26.3	57	E	6.3	2.8			6			0.028	0.7		Prof. C. DeGiorgi.
Cosenza	29.05	737.9	29.92	760.0	83.3	28.5	44	NW	1.3	0.6			9			0	0		Prof. F. D. Conti.
Cagliari	29.69	754.2	29.88	758.9	77.7	25.4	39	N			4		8	W		0	0		Prof. A. Pacinotti.
Rifiosto, (Sicily)	29.81	757.1	29.85	758.3	80.2	26.8	62	NE			2		6	E		0	0		Prof. F. Caffero.
Palermo	29.63	752.6	29.88	758.9	78.8	26.0	74	NE	5.6	2.5			10			0	0		Prof. G. Cacciatore.
Caltanissetta	27.98	710.6	29.85	758.1	85.5	29.7	38	SSE			2		0			0	0		Prof. A. Pagani.
Syracuse	29.76	755.8	29.83	757.7	82.4	28.0	73	NE			2		5	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.37	746.0	29.93	760.1	74.7	23.7	57	WNW	3.1	1.4			5	NW		0.173	4.4		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.90	759.4	30.00	762.0	58.5	14.7	97	NE	4	1.8		10n				0.069	1.74	Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.14	587.8	30.19	766.8	52.2	11.2	80	W	0.4	0.17		0	8k		NE	0.68	17.2	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. Y. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.22	767.5	30.22	767.5	57.2	14.0		SE			2					0.118	3.0		
Groningen	30.12	765.0	30.17	766.4	48.7	9.3		NNW			2					0.063	1.6		
Helder	30.17	766.2	30.17	766.2	51.6	10.9		NE			1					0.047	1.2		
Utrecht	30.15	765.8	30.20	767.0	53.8	12.1	48	WNW			2		5			0.016	0.4	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.98	761.5	30.04	762.9	50.0	10.0	69	S	13.4	6.0			4			0.087	2.2		
Brönö	29.86	758.4	29.90	759.4	44.6	7.0	85	SW	18	8			10			0.236	6.0	Light rain	
Christiania	29.87	758.6	30.02	762.4	46.6	8.1	51	WSW	4	2			0			0	0		
Tromsö	29.34	752.8	29.68	753.9	34.2	1.2	96	Calm	0	0			10			0.217	5.5	Rain & snow	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.90	759.5	30.09	764.3	69.3	20.7	76	SE	9.8	4.4			2			0	0		Dr. J. A. Sampaio
Campo Major	28.98	736.1	29.99	761.7	68.9	20.5	59	E	6.3	2.8			6	E		0.063	1.6		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.85	758.3	29.94	760.5	74.3	23.5	53	SW	3.8	1.7			5			0.055	1.4		Capt. D. A. de Cunha.
Lisbon, Observatory	29.62	752.4	29.98	761.4	70.9	21.6	60	ESE	6.3	2.8			8	SSW		0	0		The Staff.
Ponta Delgada, (Azores)	29.65	763.8	30.11	764.9	69.4	20.8	68	ESE	4.9	2.2			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India Ponta Delgada.			30.10	764.5	71.2	21.8	83	E			5		6	E	E	6	ESE	D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.47	748.5	29.89	759.3	51.4	10.8	52	NE	4	2			6						Astronomical Obs.
Wilna	29.47	748.4	29.89	759.1	47.3	8.5	73	NE	2	1			7						Astronomical Obs.
Dorpat	29.67	753.6	29.92	759.9	44.4	6.9	57	NW	4	2			7						Physical Cabinet.
St. Petersburg	29.87	758.6	29.88	759.0	39.6	4.2	81	NNW	9	4			10						Central Physical Obs.
Kuopio	29.54	750.2	29.86	758.5	39.2	4.0	72	W	7	3			5						Ch. Forsten.
Kieff	29.19	741.3	29.82	757.2	53.1	11.7	70	S	4	2			10						Physical Cabinet.
Nikolaiev	29.82	757.4	29.89	759.2	54.3	12.4	65	NE	0	0			10						Kurdakof.
Kertch	29.87	758.6	29.89	759.1	56.3	13.5	98	N	4	2			10						Lagorio.
Moscow	29.35	745.6	29.91	759.6	51.8	11.0	58	S	11	5			8						Meteorological Obs.
Lugan	29.63	752.6	29.84	757.8	48.4	9.1	84	NNE	2	1			10						Meteorological Obs.
Archangel	29.78	756.4	29.80	756.9	37.0	2.8	62	WSW	29	13			10						Ogorodnikof.
Tiflis	28.45	722.6	29.78	756.3	87.4	30.8	27	N	4	2			8						Physical Observatory.
Astrakhan	29.93	760.2	29.85	758.1	76.8	24.9	52	WNW	2	1			10			Blank	Blank		Sebastianof.
Kasan	29.69	754.0	29.96	760.9	51.1	10.6	61	NNE	2	1									Physical Cabinet.
Orenburg	29.63	752.5	30.00	762.1	39.4	4.1	79	W	13	6			3						Tschernischef.
Ekaterinburg	28.87	733.3	29.83	757.6	40.3	4.6	90	NNW	4	2			9						Meteorological Obs.
Nukuss	29.62	752.4	29.85	758.1	77.9	25.5	46	N	9	4			0						
Kasaly																			Bobrof.
Tashkend	28.36	720.3	30.02	762.5	68.4	20.2	91	Calm	0	0			0					Foggy	Michelson.
Barnaul	29.37	745.9	29.86	758.4	76.1	24.5	39	SW	0	0			1						Meteorological Obs.
Yeniseisk	29.43	747.4	29.57	751.1	64.2	17.9	75	SW	2	1			9						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.85	758.3	30.00	761.9	61.9	16.6	50	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock	30.02	762.4	30.06	763.4	56.8	13.8	71	Calm	0	0			0						
Nikolaievsk, on the Amoor					46.8	8.2	79	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.78	705.7			63.7	17.6	73	NE	4.5	2.00		0	9			0.386	9.8	Almost cov'd	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.87	758.7	29.95	760.7	79.5	26.4	83	NE	5.6	2.5		0	3k			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.90	759.4	30.00	761.9	71.6	22.0	79	S	2.5	1.1		0	10		SSW	0.020	0.5		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.82	757.5	84.2	29.0	81	SE	1.2	0.55		2cs	1k			0.620	15.75	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea level. Inches.	Barometer. Reduced to sea level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.72	754.9	29.76	755.9	40.6	4.8	71	SW			4		10			0	0		
Umea	29.81	757.1	29.86	758.4	47.8	8.8	55	NW			2		10			0	0		
Hernosand	29.80	758.4	29.91	759.7	48.6	9.2	43	W			2		2			0	0		
Stockholm	29.81	757.2	29.99	761.7	41.7	5.4	60	NNE			2		9			0.025	0.9		
Wisby	29.92	759.9	29.98	761.4	43.5	6.4	73	ENE			6		7			0.071	1.8		
Sub-Series.																			
Upsala	29.92	759.9	29.99	761.8	43.0	6.1	60	SW	0	0			10			0.004	0.10		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.67	728.3	30.09	764.3	56.7	13.7	41	N			1		1			0	0	Clear	The Observatory.
Zurich	28.50	723.9	30.15	765.8	50.7	10.4	71	NE			1		8			0.020	0.5	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.6 mm; Thermometer, —2.9 cent.; Relative Humidity, —25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.78	756.3	84.2	29.0	54	WSW	4	2.0			7		WSW	0.874	22.2		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.85	758.2	86.4	30.2		N			1		5						B. Stéfanidès.
Valona			29.98	761.5	80.1	26.7		S			1		10			0	0	Covered	A. Bertrand.
Varna			29.72	755.0	68.0	20.0		SW			4		10			Blank	Blank		Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.82	757.4	29.93	760.	84.6	29.2	66	N			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	30.06	763.5	30.13	765.3	52.9	11.6	94	Calm	0	0			10			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.08	764.0	68	20.0		SW	5	2.2			8s		W	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.			30.13	765.3	54	12.2	96	N	1	0.4			10s		NW	0.20	5.1	Light rain	G. A. Blair.
Charlottetown, P. E. Island.			30.17	766.3	60	15.6	92	Calm	0	0			10ks		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.86	758.4	30.05	763.3	65.6	18.7	78	SW			3	7c	0	W		0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	30.06	763.5	30.09	764.3	49.8	9.9	89	W			1							Raining	H. A. Johnson.
Esquimault, B. C.	29.73	755.1	29.77	756.1	47.3	8.5	100	Calm	0	0		0	0			0.34	8.6	Clear.	W. H. Bevis.
*Father Point, Quebec			30.14	765.5	45	7.2	94	NE	23	10.3		5k	5s	W	W	0	0	Threatening	J. McWilliams.
Fredericton, N. B.	30.09	764.3	30.16	766.1	54.4	12.4	87	SE	3	1.3		2ck	0			Inap.	Inap.	Fair	Prof. Harrison.
*Fort Garry, Manitoba			29.97	761.2	40	4.4	100	E	2	0.9		Haze	Fog	E	E	0	0	Foggy	James Stewart.
Goderich, Ontario	29.92	744.7	30.09	764.3	67.7	19.8	85	SW			2	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	29.02	737.1	30.09	764.3	64	17.8	94	S			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S.			30.15	765.8	58	14.4	94	S	2	0.9		0	0			0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.78	756.4	30.14	765.5	68.9	20.5	79	SW			1					0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.11	764.8	30.14	764.5	49	9.4	78	NW			2	0	1ks			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.80	756.9	30.15	765.8	66	18.9	89	SW	9	4.0		8cs	Sm'c	SW	SW	0	0	Fair	S. Woods, M. A
*Montreal, Quebec	29.88	758.9	30.07	763.8	65	18.3	80	SW	9	4.0		2c	Sm'c			0	0	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.02	762.5	66	18.9	91	SW	12	5.4		2cs	0	SW		0	0	Fair	Rev. R. Mosley
Peterboro, Ontario	29.35	745.5	30.08	764.0	61.9	16.6	88	SW			1	0	7ks			0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario	29.46	748.3	30.14	765.5	64	17.8	94	S	4	1.8		5k	0	W		0	0	Fair	H. Morgan.
Port Hastings, N. S.	30.12	765.0	30.17	766.3	58.4	14.7		Calm	0	0						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.49	749.0	30.13	765.3	59	15.0	97	W	1	0.4		5k	Fog	W		0	0	Fair	M. Payne.
*Quebec, Quebec			30.08	764.0	59	15.0	94	E	10	4.5			10n		E	0.09	2.3	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario			30.01	762.2	60	15.6	96	E	3	1.3		5ck	0	NW		0	0	Fair	W. H. McIntyre.
St. John, N. B.	30.02	762.5	30.19	766.8	53	11.7	93	Calm	0	0			Fog			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.29	744.0	30.06	763.5	69	20.6	84	SW	6	2.7		2cs	0	Calm		0	0	Clear	K. Stewart.
Stayner, Ontario			30.09	764.3	67	19.4	84	SE	4	1.8		0	0			0	0	Clear	R. J. Cole.
Stratford, Ontario	28.84	732.5	30.09	764.3	62.0	16.7	95	SW	6	2.7		2c	0	W		0	0	Fair	C. J. MacGregor, M. A
*Sydney, C. B.	30.15	765.8	30.18	766.6	59	15.0	78	SW	1	0.4		5c	0	W		0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.73	755.1	30.11	764.8	64	17.8	81	SW	1	0.4		8ck	0	W		0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					52.5	11.4	83	E				5c	5s			0	0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.16	766.1	59	15.0	76	S	3	1.3		0	0			0	0	Clear	
Alpena, Michigan	29.37	746.0	30.00	762.0	65	18.3	89	W	13	5.8			10s		W	0	0	Cloudy	
Atlantic City, New Jersey	30.24	768.1	30.26	768.6	65	18.3	94	Calm	0	0		0	Haze			0	0	Clear	
Augusta, Georgia	29.99	761.7	30.17	766.3	67	19.4	84	NE	6	2.7		0	0			0.02	0.5	Clear	
Baltimore, Maryland	30.21	767.3	30.26	768.6	58	14.4	93	SE	2	0.9			10s;fg		Calm	0	0	Foggy	
Barnegat, New Jersey	30.23	767.8	30.25	768.3	61	16.1	100	SW	5	2.2			Fog		Calm	0	0	Dense fog	
Bismarck, Dakota	28.16	715.3	29.84	757.9	38	3.3	71	Calm	0	0		0	2s; sm		Calm	0	0	Smoky	
Boise City, Idaho	27.18	690.4	29.82	757.4	42	5.6	74	Calm	0	0		5c	0	Calm		0	0	Fair	
Boston, Massachusetts	30.02	762.5	30.17	766.3	65	18.3	73	SW	6	2.7		0	Haze			0	0	Clear	
Brackettville, Texas	28.80	731.5	29.79	756.7	73	22.8	85	SE	2	0.9			10s		S	0	0	Cloudy	
Breckenridge, Minnesota	28.95	735.3	29.95	760.7	45	7.2	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Brownsville, Texas	29.92	760.0	29.98	761.5	78	25.6	82	Calm	0	0			10s		S	Inap.	Inap	Cloudy	
Buffalo, New York	29.43	747.5	30.1[illegible]	765.0	67	19.4	79	S	4	1.8		2k	0	W		0	0	Fair	
Burlington, Vermont	29.86	758.4	30.11	764.8	65	18.3	63	SW	6	2.7			Haze			0	0	Hazy	
Cairo, Illinois	29.78	756.4	30.16	766.1	68	20.0	90	W	2	0.9		10k	0	SW		0	0	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.80	680.7	30.28	769.1	47	8.3	48	NW				0	0			0	0	Clear	
Campo, California	27.36	694.9	29.93	760.2	38	3.3	80	Calm	0	0		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.12	765.0	30.13	765.3	74	23.3	81	NE	8	3.6		2k	8ks	SW	NE	0.02	0.5	Cloudy	
Cape Henry, Virginia	30.21	767.3	30.24	768.1	71	21.7	85	SE	8	3.6		5cs	0	SE		0	0	Fair	
Cape Lookout, N. Carolina	30.15	765.8	30.16	766.1	75	23.9	81	E	10	4.5		5cs	5s	Calm	Calm	0	0	Cloudy	
Cape May, New Jersey	30.22	767.6	30.25	768.3	69	20.6	84	S	8	3.6		0	0			0	0	Clear	
Charleston, South Carolina	30.05	763.3	30.12	765.0	70	21.1	90	NE	10	4.5			10s		NE	0.04	1.0	Cloudy	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	44	6.7	67	SW	2	0.9		0	1s		Calm	0	0	Clear	
Chicago, Illinois	29.36	745.7	30.02	762.5	66	18.9	84	SW	10	4.5		0	Fog		SW	0	0	Clear	
Cincinnati, Ohio	29.47	748.5	30.10	764.5	63	17.2	88	SE	2	0.9		2ck	Fog	W	SE	0	0	Clear	
Cleveland, Ohio	29.46	748.3	30.17	766.3	62	16.7	83	E	7	3.1		8c;k	0	NE; E		0	0	Fair	
Concho, Texas	28.06	712.7	29.68	753.9	65	18.3	83	SE	14	6.3		8cs		SE		0	0	Cloudy	
Corsicana, Texas	29.59	751.6	30.05	763.3	65	18.3	89	SE	2	0.9		0	5s		S	0	0	Fair	
Davenport, Iowa	29.39	746.5	30.01	762.2	64	17.8	89	SW	8	3.6		7ck	0	SW		0	0	Fair	
Denison, Texas	29.28	743.7	30.07	763.8	65	18.3	89	E	4	1.8		0	0			0	0	Clear	
Denver, Colorado	24.85	631.2	30.07	763.8	52	11.1	72	NW	3	1.3			8s		Calm	0	0	Cloudy	
Detroit, Michigan	29.43	747.5	30.08	764.0	64	17.8	89	SW	4	1.8		2k	Fog	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.35	694.7	29.56	750.8	61	16.1	66	S	6	2.7		2k	5s	S	S	0	0	Cloudy	
Dubuque, Iowa	29.29	744.0	29.96	761.0	66	18.9	84	SW	1	0.4			10s		SW	Inap.	Inap.	Cloudy	
Duluth, Minnesota	29.24	742.7	29.90	759.4	54	12.2	93	Calm	0	0			Fog		Calm	0.33	8.4	Foggy	
Eagle Pass, Texas	29.18	741.2	29.89	759.2	72	22.2	80	Calm	0	0			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.08	764.0	30.14	765.5	52	11.1	86	S	6	2.7			Fog			0	0	Foggy	
Erie, Pennsylvania	29.42	747.3	30.12	765.0	66	18.9	78	S	8	3.6		1c	2ks		SW	0	0	Fair	
Escanaba, Michigan	29.28	743.7	29.91	759.7	59	15.0	88	Calm	0	0		5k	0	SW		0.63	16.0	Fair	
Florence, Arizona																			
Fort Bayard, New Mexico	24.07	611.4	30.07	763.8	48	8.9	10	NW	2	0.9		0	0			Inap.	Inap.	Clear	
Fort Craig, New Mexico	25.62	648.2			55	12.8	12	NW	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.51	749.5	30.04	763.0	65	18.3	83	SE	3	1.3		0	5s		S	0	0	Fair	
Fort Griffin, Texas	28.76	730.5	30.03	762.7	56	13.3	80	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.80	731.5	29.88	758.9	65	18.3	89	SE	2	0.9			10s		SE	0	0	Cloudy	
Fort Sully, Dakota	28.28	718.3	29.97	761.2	40	4.4	91	Calm	0	0		8c	0	Calm		0	0	Fair	
Galveston, Texas	29.99	761.7	30.03	762.7	75	23.9	81	SE	3	1.3		5k	0	SE		0	0	Fair	
Grand Haven, Michigan	29.39	746.5	30.02	762.5	67	19.4	90	S	15	6.7		2k	1s	W	SW	0	0	Fair	
Indianapolis, Indiana	29.36	745.7	30.12	765.0	66	18.9	90	SW	1	0.4		0	5s; sm		SW	0	0	Fair	
Indianola, Texas	30.00	762.0	30.03	762.7	78	25.6	77	SE	4	1.8		1k	0	Calm		0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.00	762.0	30.02	762.5	74	23.3	85	N	6	2.7		2k	2n	NE	NE	0.21	5.3	Light rain	
Keokuk, Iowa	29.41	747.0	30.00	762.0	68	20.0	84	SW	8	3.6		0	2s		Calm	0	0	Fair	
Key West, Florida	29.91	759.7	29.94	760.5	82.0	27.8	67	N	10	4.5		1cs	1ks	Calm	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.20	767.1	30.23	767.8	71	21.7	100	NE	11	4.9		5ck	2s	Calm	NE	0	0	Fair	
Knoxville, Tennessee	29.20	741.7	30.20	767.1	59	15.0	87	Calm	0	0		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.18	741.2	29.88	758.9	67	19.4	84	S	8	3.6			10s		S	0	0	Cloudy	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	61	16.1	35	NW	1	0.4		0	0			0	0	Clear	
Laredo, Texas					77	25.0	77	SE	8	3.6		10k	0	S		0	0	Cloudy	
Leavenworth, Kansas	29.17	740.9	29.99	761.7	64	17.8	89	S	6	2.7			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.59	751.6	29.92	760.0	59	15.0	81	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.59	751.6	30.14	765.5	65	18.3	89	S	1	0.4		0	Fog		S	0	0	Foggy	
Lynchburg, Virginia	29.57	751.1	30.25	768.3	59	15.0	64	Calm	0	0		0	0			0	0	Clear	
Maricopa Wells, Arizona					48	8.9	42	Calm				0	0			0.40	10.2	Clear	
Marquette, Michigan	29.20	741.7	29.88	758.9	60	15.6	82	SE	3	1.3		0	0			0	0	Clear	
Mason, Texas	28.38	720.8	30.10	764.5	66	18.9	68	Calm	0	0		0	2s			0	0	Cloudy	
Memphis, Tennessee	29.83	757.7	30.14	765.5	68	20.0	94	E	3	1.3			10s		SE	0	0	Fair	
Milwaukee, Wisconsin	29.32	744.7	29.99	761.7	64	17.8	88	SW	11	4.9		5cs	Sm'e	W	SW	0	0	Clear	
Mobile, Alabama	30.05	763.3	30.09	764.3	69	20.6	92	NE	4	1.8		0	1s		Calm	0	0	Clear	
Montgomery, Alabama	29.92	760.0	30.15	765.8	66.5	19.2	90	N	3	1.3		0	Haze		Calm	0	0	Foggy	
Morgantown, West Virginia	29.17	740.9	30.23	767.8	56	13.3	87	Calm	0	0		8c	Fog	W		0	0	Foggy	
Mt. Washington, N. H.	24.04	610.6	30.40	772.1	48	8.9	92	NW	20	8.9			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.67	753.6	30.20	767.1	62	16.7	94	Calm	0	0			Fog		Calm	0	0	Clear	
New Haven, Connecticut	30.09	764.3	30.20	767.1	66	18.9	78	Calm	0	0		0	Haze			0	0	Clear	
New London, Connecticut	30.17	766.3	30.22	767.6	68	20.0	79	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	29.99	761.7	30.05	763.5	73	22.8	90	E	6	2.7			10s		Calm	0.04	1.0	Cloudy	
Newport, Rhode Island	30.16	766.1	30.20	767.1	64	17.8	88	SW	6	2.7		0	0			0	0	Clear	
New York, New York	30.08	764.0	30.25	768.3	59	15.0	94	SW	8	3.6		0	Sm'e		Calm	0	0	Clear	
Norfolk, Virginia	30.18	766.6	30.24	768.1	68	20.0	94	SE	4	1.8		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.03	686.6	29.53	750.0	58	14.4	73	NW	12	5.4			10s		NW	1.93	49.0	Cloudy	
Olympia, Washington Ter.	29.77	756.1	29.81	757.2	54	12.2	93	SW	6	2.7			10s		S	0.76	19.3	Cloudy	
Omaha, Nebraska	28.84	732.5	29.89	759.2	64	17.8	83	S	2	0.9			10s		S	Inap.	Inap.	Cloudy	
Oswego, New York	29.82	757.4	30.13	765.3	63	17.2	83	SE	5	2.2		2k	Haze	W		0	0	Hazy	
Pembina, Dakota	29.16	740.7	29.99	761.7	42	5.6	91	S	5	2.2		4k	0	NW		0	0	Fair	
Philadelphia, Pennsylvania	30.21	767.3	30.26	768.6	62	16.7	94	W	4	1.8			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					54	12.2	31	NE				0	0			0	0	Clear	
Pike's Peak, Colorado	17.83	452.9	30.04	763.0	20	— 6.7	100	N	12	5.4			10n		Calm	0.26	6.6	Light snow.	
Ploche, Nevada	24.11	612.4	29.88	758.9	46	7.8	26	NW	3	1.3		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.38	746.2	30.18	766.6	58	14.4	87	Calm	0	0			Fog			0	0	Foggy	
Port Huron, Michigan	29.43	747.5	30.07	763.8	66	18.9	84	S	6	2.7		0	5ks		S	0	0	Fair	
Portland, Maine	30.09	764.3	30.14	765.5	58	14.4	81	W	2	0.9		2k	Sm'e	Calm		0	0	Smoky	
Portland, Oregon	29.83	757.7	29.93	760.2	57	13.9	93	SW	6	2.7			10n		Calm	0.20	5.1	Light rain	
Prescott, Arizona					43	6.1	61	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	77	25.0	78	NE	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.62	752.3	29.97	761.2	60	15.6	39	NW	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.51	749.5	30.11	764.8	66	18.9	68	SW	10	4.5		5k	0	SW		0	0	Fair	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.47	748.5	30.03	762.7	57	13.9	69	W	1	0.4			10s		Calm	0	0	Cloudy	
Sacramento, California	29.88	758.9	29.97	761.2	56	13.3	74	SE	4	1.8		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.55	750.6	30.11	764.8	66	18.9	89	S	8	3.6		5c	Fog	Calm	Calm	0	0	Fair	
St. Marks, Florida	30.05	763.3	30.07	763.8	71	21.7	90	NE	8	3.6			10s		NE	0	0	Cloudy	
St. Paul, Minnesota	29.07	738.4	29.87	758.7	60	15.6	82	SE	1	0.4			Fog		Calm	0.22	5.6	Foggy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.69	652.5	30.02	762.5	47	8.3	34	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.31	744.5	29.88	758.9	68	20.0	84	E	2	0.9			10ks		S	0	0	Cloudy	
San Diego, California	29.87	758.7	29.94	760.5	59	15.0	87	NE	3	1.3		0	0			0	0	Clear	
Sandusky, Ohio	29.49	749.0	30.14	765.5	68	20.0	69	SW	6	2.7		5ck	Haze	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.22	767.6	30.24	768.1	63	17.2	94	W	17	7.6		0	Fog		W	0	0	Clearing	
San Francisco, California	29.94	760.5	30.01	762.2	55	12.8	80	W	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	46	7.8	33	NE	4	1.8		Haze	2s		Calm	Inap.	Inap.	Fair	
Savannah, Georgia	30.00	762.0	30.09	764.3	70	21.1	90	NE	8	3.6		2cs	2ks	E	NE	Inap.	Inap.	Fair	
Shreveport, Louisiana	29.88	758.9	30.09	764.3	64	17.8	94	E	2	0.9			Fog		Calm	0	0	Foggy	
Smithville, North Carolina	30.13	765.3	30.16	766.1	70	21.1	95	N	8	3.6			10n		E	0.63	16.0	Light rain	
Springfield, Massachusetts	30.01	762.2	30.14	765.5	56	13.3	93	Calm	0	0			Fog		Calm	0	0	Foggy	
Stanwix, Arizona					50	10.0	42	SW				0	0			0	0	Clear	
Stockton, Texas					63	17.2	82	SE	8	3.6		0	1s		Calm	0	0	Clear	
Thatcher's Island, Mass.	30.11	764.8	30.16	766.1	59	15.0	94	SW	8	3.6		0	0			0	0	Foggy	
Toledo, Ohio	29.46	748.3	30.12	765.0	66	18.9	90	SW	4	1.8		5k	Haze	NW	Calm	0	0	Fair	
Tucson, Arizona	27.52	699.0	30.07	763.8	69	20.6	74	SW				0	0			0	0	Clear	
Tybee Island, Georgia	30.04	763.0	30.06	763.5	72	22.2	90	NE	24	10.7		0	5ks		NE	0.70	17.8	Fair	
Umatilla, Oregon	29.52	749.8			56	13.3	53	SE	8	3.6		10k	0	E		0	0	Cloudy	
Vicksburg, Mississippi	29.87	758.7	30.13	765.3	66	18.9	94	Calm	0	0			10s		SE	0	0	Cloudy	
Virginia City, Montana	24.26	616.2	29.74	755.4	36	2.2	52	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.63	752.6	30.06	762.0	52	11.1	72	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	30.14	765.5	30.26	768.6	59	15.0	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Wickenburg, Arizona					50	10.0	23	W				0	0			0	0	Clear	
Wilmington, N. Carolina	30.08	764.0	30.16	766.1	70	21.1	90	NE	6	2.7			10s		NE	0.01	0.3	Cloudy	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	35	1.7	35	SW	7	3.1		2cs	0	Calm		0	0	Fair	
Wood's Holl, Mass.	30.17	766.3	30.22	767.6	67	19.4	84	SW	8	3.6		0	0			0	0	Clear	
Yankton, Dakota	28.72	729.5	29.98	761.5	58	14.4	91	E	2	0.9			10s		E	Inap.	Inap.	Cloudy	
Yuma, Arizona	29.73	755.1	29.89	759.2	60	15.6	45	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.14	765.5	30.19	766.8	32.5	0.3	95	N	2	0.9		1c	0	SE		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.89	759.2	29.91	759.7	81	27.2	82	NE	2.4	1.1		8k	0	N		Inap.	Inap.	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	82	27.8	83	N			1	8c	2s	SE		0	0		James Gall.
Santiago de Cuba, W. I.	29.86	758.4	29.87	758.7	81.5	27.5	78	NE	6	2.7		cs	ks			0	0		T. W. Beattie.
Navassa, W. I.	29.80	756.9	29.88	758.9	84.5	29.2		E			3					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	E				2c	5s	E		0	0	Fair	G. O. Gellich
Pt-a-Pitre, G'd'loupe, W. I.	29.76	755.9	29.78	756.4	81	27.2	87	E				5k	5ks		E				L. V. Bigard.
Bridgetown, Barbados, W. I.	29.94	760.5	29.96	761.0	82	27.8	78	NE	3	1.3		2k	8ks	E		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.99	761.7	85	29.4	73	SE	2	0.9		5k	s	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8			65.0	18.3	84	Calm			0		10n			0.52	13.2	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.01	762.2	59	15.0	56	13.3	87	SW	12	5.4			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.22	767.6			74	23.3	86	NE	7	3.1			4		NNE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.14	765.5	68	20.0	59	15.0	82	SSW			1					0	0			Smoky	
Naval Hospital, Yokohama, Japan	29.89	759.2	66	18.9	70	21.1	92	NNE			3		10n		NNE	1.69	42.9			Raining	
Adams, Montevideo, Uraguay	29.87	758.7	58	14.4	57	13.9	58	W			5		1		W	0	0			D clouds	
Alert, Hakodadi, Japan	30 12†	765.0†	62	16.7	62	16.7	88	N			2		2		N					D. clouds	
Alliance, Constantinople, Turkey.	29.92	760.0	81	27.2	82	27.8	56	W			1		8		Calm					Cloudy	
Ashuelot, Che-foo, China	30.20	767.1	78	25.6	68	20.0	50	SE			1–2		0					Smooth		Blue sky	
Canonicus, New Orleans, La.	30.07	763.8	53	11.7	73	22.8	85	NE			2		10		N&E					Cloudy	
Colorado, New York, N. Y.	30.31	769.9	67	19.4	63	17.2	83	WSW	6	2.7			3		WSW	0	0			Light fog	
Despatch, Beikos Bay, Bosphorus	29.93	760.2	84	28.9	82	27.8	63	SW			2		5		Calm			Smooth			
Essex, N. 30° 03′, W. 16° 40′	29.87	758.7	76	24.4	76	24.4	91	ESE			2		8					Smooth		D. clouds	
Franklin, Norfolk, Va.	30.28	769.1	66	18.9	71	21.7	100	Calm	0	0			4		Calm	0	0			Clear	
Frolic, N. 2° 49′, W. 47° 37′	30.04	763.0	81	27.2	81	27.2	96	NE			3		2k		Calm	0	0	Smooth		D. clouds	
Gettysburg, Naples Bay, Italy	29.84‡	757.9‡			77	25.0	95	W			1		7		Calm	Blank	Blank	None		D. clouds	
Kearsarge, Singapore, India	29.86	758.4			84	28.9	91	SSE			2		4			0	0	Smooth		Hazy	
Lackawana, Port Townsend, W. T.	29.84	757.9			57	13.9	81	Calm			0		7							D. clouds	
Marion, Smyrna, Turkey	29.92	760.0	89	31 7	90	32.2	50	NW			2		3		Calm	0	0	Smooth		Hazy	
Monocacy, Hakodadi, Japan	29.97	761.2	60	15.6	58	14.4	76	NW			1		9		N&E	0	0	Smooth		D. clouds	
Monongahela, N. 39° 08′ 24″, W. 63° 33′	30.36	771.1	70	21.1	70	21.1	85	SW			1		ck					Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.26	768.6			71	21.7	90	NE	16	7.2			5		NE	0	0			Blue sky	
Omaha, S. 30° 00′, W. 74° 45′	30.16	766.1	58	14.4	58	14.4	80	SE	28	12.5			3		SE	0	0	High	SE	Bright	
Onward, Callao, Peru	30.04	763.0	69	20.6	67	19.4	89	SW			2		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.27	768.8	67	19.4	61	16.1	88	WSW			3		5		WSW					Foggy	
Palos, Ningpo, China	30.22	767.6	73	22.8	67	19.4	84	WNW			2		10		S&W					Cloudy	
Pensacola, Mare Island, Cal.	30.11	764.8			60	15.6	88	SW			3		0			0	0			Pleasant	
Plymouth, New York, N. Y.	30.42	772.7	70	21.1	62	16.7	88	NW			2		0							Clear	
Ranger, Nagasaki, Japan	30.15	765.8			70	21.1	80	Calm			0		0					Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.90	759.4			77	25.0	95	ESE			1		8		SSE					D. clouds	
Santee, Annapolis, Md.	30.32	770.1	67	19.4	63	17.2	94	Calm			0					0	0			Dense fog	
St. Louis, League Island, Pa	30.16	766.1	63	17.2	62	16.7	94	SW	2	0.9			10		SW	0	0			Foggy	
Tennessee, Hakodadi, Japan	29.89	759.2	68	20.0	59	15.0	65	N	6	2.7			7		N&E	0	0	Smooth		D. clouds	
Trenton, Marseilles, France	30.05	763.3	68	20.0	65	18.3	73	NNW	5	2.2			4		N	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.92	760 0	90	32.2	90	32.2	47	WNW			1		2		WNW					D. clouds	
Wabash, Boston, Mass.	30.21	767.3	65	18.3	65	18.3	78	W	3	1.3			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.50†	774.7†	64	17.8	60	15 6		Calm			0									Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 46° 32′, E. 176° 36′			29.90*	759.4*	50	10.0	100	ENE			7		10		ENE	Rough	ENE	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 33° 22′, E. 135° 54′					81	27.2		NNE			5		8		NE	Broken	NEto N	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 40° 13′, W. 50° 48′			30.12	765.0	70.0	21.1	70	NW			4		8		NW	Long	N	Blue sky	Capt. A. Jaeger.
S. S. Ohio, N. 41° 55′, W. 69° 1′			30.26	768.6	66.0	18.9	74	WSW			3		k		WSW	Smooth		Clearing	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio, N. 48° 44′, W. 46° 30′			30.02*	762.5*	52	11.1	86	N			5				N	Small	SSW	Clear	Captain Morrison. Captain Harris.
S. S. Pennsylvania																			
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.07	763.8	72	22.2	85	NE	6	2.7		2k	0	N				Clear	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 26, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.00	761.9	76.3	24.6	79	Calm			0		1			0.264	6.7	Fair	Michel.
Algiers			29.95	760.8	77.0	25.0	80	Calm			0		10			0.378	9.6	Hidden	Peter.
La Calle			29.92	760.0	73.9	23.3	81	E			4		0			0	0	Hidden	Fleury.
Tunis			29.97	761.1	84.2	29.0		N			4		2			0	0	Clear	Jacques.
Sfax			29.96	761.0	86.0	30.0		ENE			4		2			0	0	Clear	Husson.
Saida			29.98	761.4	71.6	22.0		SSW			3		6			0.146	3.7	Fair	Millot.
Tebessa			29.95	760.6	82.4	28.0		S			4		2			0	0	Clear	Bourgeois.
Geriville			30.00	762.0	57.7	14.3	82	NE			3		7			0.276	7.0	Cloudy	Lemaillot.
Laghouat			30.00	761.9	78.8	26.0	48	W			4		9			Inap	Inap.	Hidden	François.
Biskra			29.97	761.1	92.1	33.4	50	NW			1		3			Inap.	Inap.	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.66	753.4	30.22	767.5	56.3	13.5	47	NE			5		7			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.44	747.8	30.22	767.6	49.3	9.6	44	W					5			0.055	1.4		Dr. Wierzbiski.
Eperies	29.24	742.7	30.14	765.5	45.7	7.6	67	N			3		10k		S	0	0		Julius Mikolik.
Gratz	28.93	734.9	30.20	767.1	50.7	10.4	63	NE			3		7			0	0		Andreas Rospini.
Hermannstadt	28.61	726.7	30.04	763.0	49.3	9.6	49	WNW			3		4			0	0		Prof. Reissenberger.
Kremsmünster	28.90	734.1	30.27	768.9	46.4	8.0	62	WSW			2		7			0	0		Prof. C. Wagner.
Lemberg	29.03	737.4	30.04	762.9	46.9	8.3	75	NE			1		7			0.122	3.1		Dr. T. Stanecki.
Pola	29.98	761.5	30.10	764.4	59.7	15.4	39	ENE			5		9s			0	0		I.R. Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.86	758.4	30.14	765.6	52.5	11.4	54	N			2		8			0	0		Karl Stancel.
Trieste	30.04	763.0	30.14	765.6	58.6	14.8	56	ENE			5		1			0	0	Clear	P. Busin.
Vienna	29.58	751.2	30.29	769.3	48.0	8.9	80	WNW			2		10			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.80	731.6	30.34	770.7	48.0	8.9	46	N			2		2			0	0		Royal Observatory.
Brussels	30.12	765.0	30.32	770.1	54.1	12.3	52	SSW			1		k			0	0		
Furnes	30.26	768.7	30.29	769.3	56.7	13.7	93	SSW			2		8			0	0		
Maeseyck	30.20	767.0	30.33	770.3	54.5	12.5	63	SSW			2		3			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.15	765.8	30.25	768.3	56.0	13.3		W.	10	4.5			6			0	0	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan	30.26	768.6	30.28	769.1	58	14.4		NNW			2		5					D. clouds	William McNeil.
Armagh, Observatory			30.38	771.6	55.2	12.9		NW	5	2.2			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.30	769.6	57.8	14.3		WNW	11	4.9			0					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.39	771.9	56.4	13.6		NW			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.89	759.2	30.29	769.4	55.4	13.0		W			0		3			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)			29.93	760.2	83.0	28.3		NE			2		2					D. clouds	Pvt. G. W. Roberts, A. [H. C
Cambridge, Observatory			30.30	769.6	54.0	12.2		N			1		10					Overcast	H. Todd.
Cardington																			John McLaren.
Chatham, School M. E	30.14	765.5	30.27	768.8	61.2	16.2		W			1		4					Hazy	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.83	732.3	30.30	769.6	58.2	14.6		NE			1		5					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.29	769.4	30.32	770.1	58	14.4		WNW			3		5					D. clouds	J. Mac Gowan.
Dover	30.26	768.6	30.28	769.1	57	13.9		SSE			1		5					¾ clouded	J. Costello.
Eccles, (near Manchester)			30.28	769.1	54.7	12.6		E	3.2	1.4			10					Misty	Thomas Mackereth.
Falmouth, Observatory	30.10	764.5	30.32	770.1	59.9	15.5		N			1		6?					Overcast?	The Staff.
Fort Napier, (Natal)	27.84	707.1	30.04	763.0	69.3	20.7		E			3		9					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.91	759.7	85	29.4		W			1		4					D. clouds	
Galway, Queen's College			30.05	763.3	58	14.4		NW			1		5					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.90	759.4	29.93	760.2	68.3	20.2		E			3		10					Raining	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	30.07	763.8	30.28	769.1	57.0	13.9		W			2		4					Blue sky	D. G. Maclean.
Great Yarmouth	30.27	768.8	30.28	769.1	54	12.2		N			2		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.11	764.8	30.28	769.1	61.0	16.1		NE			1		2					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.07	763.8	30.29	769 4	59	15.0		NE			1		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.30	769.6	61	16.1		NE			4		2			0	0	D. clouds	M. P. Moyle.
Holyhead	30.28	769.1	30.33	770.4	56	13.3		NNW			3		1					Blue sky	John Tilston.
Jersey	30.02	762.5	30.31	769.9	59.0	15.0		Calm			0		9					Gloomy	J. Fisher.
Kew, Observatory			30.30	769.6	58.0	14.4		NW	3	1.3			6					D. clouds	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			30.30	769.6	53.0	11.7		Calm			0		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.87	758.7	29.94	760.5	82.6	28.1		NE			1		0					Blue sky	Corp'l. P. Bravis, A.H.C.
Nairn	30.15	765.8	30.24	768.1	55	12.8		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.86	758.4	85.0	29.4		NW			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.12	765.0	30.31	769.9	61.6	16.4		SSE			2		5k;ks		N	0.008	0.20	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.76	755.9	30.29	769.4	58.2	14.6		NNE			1		3					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.30	769.6	57	13.9		NNE			1		6					D. clouds	F. Lucas
Plymouth	30.22	767.6	30.30	769.6	60.0	15.6		SW			2		10					Overcast	John Merrifield.
Roche's Point	30.32	770.1	30.36	771.1															W. Kennedy.
Saint Ann's Head	30.16	766.1	30.33	770.4	58	14.4		N			2		7					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			30.19	766.8	53.2	11.8		W	20	8.9			10					Misty	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.90	759.4	62.2	16.8		NNE			2		10					Raining	Sergt. W. H. Lyne.
Sheffield	30.07	763.8	30.31	769.9	55.0	12.8		Calm			0		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.27	768.8	30.30	769.6	63.3	17.4	58	W			1		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					57.2	14.0		S			0		6					D. clouds	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lewis C., (Hebr.)			30.21	767.3	56	13.3		W			2		2					Blue sky	John Smith.
Stratfield Turgiss	30.09	764.3	30.31	769.9	58.3	14.6		E			1		4					D clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.18	766.6	55	12.8		WNW			3		8					Overcast	John Trotter.
Truro, Royal Institution			30.30	769.6	65	18.3		N			4		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.28	769.1	58.2	14.6		N	9	4.0			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					55	12.8		NNE			3		0						Henry Mercer.
Cape Good Hope, Obs'y	30.04	763.0	30.08	764.0	68.3	20.2	67	SSE	21	9.4		2	3						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.41	772.4	47.5	8.6	88	Calm			0		0			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.29	769.4	56.4	13.6		W			1	2c		N		0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.93	760.2	30.12	765.0	76.1	24.5	63	E	17.2	7.7		1	4	Calm	E	0	0	Bright	C. Meldrum.
Melbourne, Observatory	30.34	770.6	30.43	772.9	50.8	10.4	80	SE	4	1.8			0			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.30	769.6	55	12.8		WNW			3		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.98	761.5	51	10.6		W			4		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES.

VESSELS.

															Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 48° 55′, W. 31° 0′			29.75	755.6	62	16.7		SE			6		10		S	15*	SSE; WSW	Showery	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prohn.
S. S. Seine, N. 51° 0′, W. 34° 42′			29.68	753.9	60	15.6		SE			6		10			7	S	Overcast	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 40° 30′, W. 61° 5′			30.26	768.6	72	22.2		W			3		5			2	NW	D. clouds	Capt. Alex. Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.12	663.4			67.1	19.5	98	SE			1		4cs			0.7	18.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation. *Rain-fall in three days.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.13	765.2	30.17	766.4	48.7	9.3	80	WSW			2		10						
Fanöe	30.16	766.0	30.18	766.5	51.3	10.7	89	WSW			4		10					Raining	
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.72	754.9	29.76	756.0	52.0	11.1	90	SW			6		8						
Thorshavn, (Faröe)	29.97	761.2	30.00	762.1	53.8	12.1	90	W			4		10					Raining	
Vestervig	29.93	760.3	30.10	764.6	53.6	12.0	82	W			2		5						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.78	756.4	30.33	770.4	57.2	14	76	SW			1		2		NE	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.00	762.0	30.08	764.0	63.0	17.2	35	N			8		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.74	755.4	30.31	769.9	56.1	13.4	60	E			2	2c		NE		0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	30.05	763.2	30.34	770.5	54.3	12.4	60	E			1		5		ENE	0	0	Cloudy	Normal School.
Besançon	29.39	746.5	30.31	769.8	50.7	10.4	62	E			6		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.40	746.7	30.33	770.3	55.8	13.2	66	N			6		0			0	0	Clear	Normal School.
Bourges, Normal School	29.71	754.5	30.26	768.5	55.4	13	86	NE			3		5		NE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.99	761.8	30.21	767.4	61.0	16.1	71	N			1		4		Calm	0	0		The Staff.
Carcassonne, Normal School	29.72	754.8	30.13	765.4	66.2	19	53	W			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons sur-Marne, N. Sch'l	30.01	762.2	30.33	770.4	55.0	12.8	61	E			1		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.85	732.8	30.21	767.4	55.0	12.8	50	N			1		5		NE	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.43	747.6	30.34	770.6	50.0	10	62	NNE			2		2		NNE	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.93	734.8	30.07	763.8	68.0	20.0	39	W			2		5		E	0	0	½ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.10	764.6	30.28	769.1	58.6	14.8	70	NW			6		2		NW	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	30.00	761.9	30.31	769.8	55.0	12.8	65	E			2		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.34	745.3	30.27	768.9	52.5	11.4	52	NE			6		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.20	767.1	30.30	769.6	66.2	19.0	49	ENE			2		5		NW	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.53	750.1	30.23	767.8	53.8	12.1	72	NNE			4		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.19	741.5	30.26	768.5	50.4	10.2	42	N			4				N	0	0		Normal School.
Nismes, Normal School	29.78	756.4	29.98	761.4	67.1	19.5	47	N			8		2		N	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	30.07	763.8	30.32	770.0	55.9	13.3	43	NE			1		4ck		NE	0	0	Cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.25	768.4	30.28	769.2	63.7	17.6	40	NE			3		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.23	767.9	30.32	770.1	57.0	13.9	52	N			1		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.13	739.9	30.21	767.3	60.1	15.6	47	E			2		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.75	755.6	29.78	756.3	81.3	27.4										0	0		L'Abbé Marchésl.
Marseilles, Observatory			30.02	762.5	68.4	20.2	40	W			2		4			0.295	7.50	Cloudy	The Staff.
Mont-Louis	24.93	633.2	30.24	768.2	50.0	10.0	34	SE	5.6	2.50			2		N	0.098	2.5		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.03	762.7	30.30	769.7	56.7	13.7	44	ENE			2		3		NNE	0	0		Marié Davy, Director.
Perpignan			30.12	765.0	62.6	17.0	25	NE	18.6	8.33			1		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.30	541.1			39.2	4.0		NW			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.58	573.4			42.8	6.0		NW			1		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.15	765.8	30.32	770.0	56.8	13.8	48	NNE			1		1		NE	0	0	Clear	E. Renou.
Toulouse, Observatory	29.49	749.1	30.22	767.6	59.4	15.2	34	NNW			3		1			0	0		The Staff.
Tours	30.08	764.1	30.28	769.1	58.3	14.6	55	N			1		3		N	0	0		C. Marquet.
Versailles, (near Paris)			30.31	769.9	56.8	13.8	50	N			1		3			0	0	Vapory	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.13	765.4	30.16	766.1	62.2	16.8	74	NE	2.7	1.2		6c		W		0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,265 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.: local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.17	766.3	30.34	770.6	50.9	10.5	54	W			1		8			0.089	2.26		Prof. Arndt.
Breslau	29.78	756.3	30.31	769.9	47.3	8.5	49	NNW			4		9	N		0.038	0.97		Royal University Obs'y.
Carlsruhe	29.89	759.2	30.33	770.3	52.5	11.4	48	SE			1		3			0	0		Albert Senz.
Cassel	29.79	756.6	30.40	772.2	55.0	12.8	44	SE			2		3	SW		0.010	0.25		Dr. H. Mohl.
Crefeld	30.15	765.8	30.32	770.0	55.9	13 3	53	S			1		3k			0	0		Director Lose.
Emden	30.28	769.2	30.32	770.1	54.7	12.6	70	WSW			3		1			0.024	0.6		Prof. Prestel.
Frankfort on the Main	30.01	762.2	30.38	771.7	51.8	11.0	25	E			1		2			0	0		Physical Society.
Friedrichshafen	28.82	732.1	30.28	769.2	50.0	10.0	51	NE			7		2	NE		0	0		M. Wilhelm.
Hamburg	30.26	768.5	30.33	770.3	52.7	11.5	56	WSW			2		9k			0.004	0.1	Fair	Captain F. Hegemann.
Kiel	30.26	768.5	30.27	768.9	51.4	10.8	70	WSW			4		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.04	763.0	30.11	764.8	48.6	9.2	55	NW											Prof. E. Luther.
Köslin			30.25	768.4	48.9	9.4		W			2		2			0	0		H. Müller.
Leipsic, Observatory	29.97	761.3	30.40	772.2	50.5	10.3	53	NW			1		6	NW		0.134	3.4		Prof. Bruhns.
Memel, Naval School	30.04	762.9	30.08	764.1	47.5	8.6	56	WNW			4		9s					Squally	Reinbrecht von Skalweit.
Neufahrwasser	30.17	766.3	30.19	766.7	50.0	10.0	51	NW			4		7			0.075	1.9		A. Lothes.
Posen	30.02	762.5	30.31	769.9	49.8	9.9	54	NW			5		6						Dr. Magener.
Strassburg Obs., (in Alsace)	29.78	756.3	30.34	770.5	51.4	10.8	42	NE			3		3	SE		0.000	0.01		Dr. Schur.
Stuttgart	29.36	745.7	30.33	770.3	47.8	8.8	50	NE			1		5	E		0	0		Prof. Schoder.
Treves, (Trier)	29.69	754.1	30.22	767.5	53.2	11.8	35	E			3		2			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.78	731.0	30.32	770.0	47.1	8.4	49	N			1		8	N		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.30	769.6	30.35	770.9	49.8	9.9	63	W			2		3						E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.48	748.7	29.85	758.1	91.4	33.0		NW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.70	754.3	29.75	755.5	81.6	27.6	83	SW	38.0?	17.0?			0			0	0	Blue sky	
Deesa																			
Bombay	29.76	756.0	29.80	756.9	75.7	24.3	88	ENE	23.0	10.3			10		E	0.40	10.2	Thunder-storm	
Poona	27.76	705.0	29.76	755.8	77.2	25.1	82	N					10		N	0.84	21.3	Thunder-storm	
Lahore	28.96	735.6	29.68	753.9	91.4	33.0	35	Calm	0.9	0.4			0			0	0	Blue sky	
Belgaum	27.30	693.4	29.86	758.4	73.8	23.2	87	S	9.0	4.0			3			0.46	11.7	D. clouds	
Bangalore																			
Roorkee	28.78	731.1	29.66	753.2	94.8	34.9	30	NW	2.8	1.2						0	0		
Agra	29.11	739.3	29.65	753.1	96.7	35.9	21	N								0	0		
Trichinopoly																			
Nagpur	28.71	729.3	29.74	755.5	85.3	29.6	59	S	2.2	1.0			9			0	0	Thunder	
Madras																			
Lucknow	29.31	744.4	29.67	753.6	95.1	35.1	36	W	0.9	0.4			1			0	0	D. clouds	
Allahabad	29.37	746.0	29.67	753.7	91.7	33.2	51	Calm	1.2	0.5			0			0	0	Blue sky	
Patna	29.55	750.7	29.73	755.2	84.6	29.2	75	E	1.1	0.5			6	E	E	0	0	D. clouds	
Hazaribagh	27.76	705.1	29.77	756.2	76.8	24.9	84	ESE	6.4	2.9			9		E	0.16	4.1	Thunder-storm	
Cuttack	29.71	754.6	29.79	756.6	83.8	28.8	77	S	7.3	3.3			6			0.18	4.6	D. clouds	
Calcutta (Alipore)	29.78	756.5	29.81	757.1	81.7	27.6	91	S	3.0	1.3			6			0	0	D. clouds	
Goalpara	29.40	746.8	29.79	756.7	78.8	26.0	82	SW	0.7	0.3			6		SW	0.01	0.3	D. clouds	
Chittagong	29.78	756.4	29.87	758.8	83.4	28.6	85	Calm	9.8	4.4			10			0	0		
Sibsagar	29.51	749.5	29.85	758.1	76.1	24.5	95	ESE	3.4	1.5			10	W	W	0.28	7.1	D. clouds	
Rangoon																			
Jubbulpore	28.37	720.6	29.71	754.6	87.9	31.1	61	NW	4.7	2.1			3	SW		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.23	564.7	30.04	762.9	29.7	— 1.3	89	E			2		10			2.362*	60.0*		Ab. Dom. Morgini.
Stelvio	22.18	563.4	30.02	762.4	30.9	— 0.6		SSE			1		6			0	0		Signora Ernesta Manfredi.
Udine	29.73	755.2	30.13	765.2	59.2	15.1	30	SE	4.3	1.9			0			0	0		Prof. Giovanni Clodig.
Padua	30.03	762.8	30.14	765.6	59.7	15.4	42	ESE	8.7	3.9			8			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.95	760.8	30.15	765.7	57.9	14.4	50	E	1.8	0.8			5	W		0	0		Conte Alm. Da Schio.
Verona	29.87	758.6	30.09	764.2	61.2	16.2	47	NE			2		6	SW		0	0		Dott. B. Bertoncelli.
Bergamo	28.74	730.1	30.02	762.6	56.1	13.4	48	E			4		3			0.126	3.2		Prof. Trionfini Carlo.
Domodossola	29.06	738.1	30.08	764.0	60.6	15.9	50	SW			6		6			0	0		Prof. Giuseppe Calza.
Milan	29.63	752.6	30.15	765.7	58.1	14.5	52	E			2		2	S		0	0		Ab. Gio. Capelli.
Pavia	29.80	756.8	30.14	765.6	58.8	14.9	53	E			2		8	NE		0	0		Prof. Gio. Cantoni.
Moncalieri	29.25	743.0	30.16	766.0	55.4	13.0	68	ENE	2.5	1.1			9	SE		0.020	0.5		Prof. P. F. Denza.
Mondovi	28.22	716.9	30.13	765.2	53.1	11.7	66	NNW			6		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.83	757.7	30.05	763.2	69.8	21.0	25	ENE			6		3			0	0		Prof. L. Vassallo.
Genoa	29.59	739.2	30.06	763.5	68.0	20.0	42	NW	4.9	2.2			2	N		0.098	2.5		Prof. G. M. Garibaldi
Piacenza	29.90	759.5	30.16	766.0	58.1	14.5	52	E	13.7	6.1			10	SE		0	0		Dott. G. Manzi.
Parma	29.84	758.0	30.15	765.9	60.8	16.0	57	SSW			4		7			0.055	1.4		Prof. P. Pigorini.
Florence	29.81	757.2	30.07	763.7	61.7	16.5	57	NE			6		10			0	0		Cav. F. Meucci.
Leghorn	29.91	759.6	29.99	761.7	62.1	16.7	73	ENE	3.8	1.7			10			0	0		Prof. P. Monte.
Siena	28.95	735.2	30.15	765.7	57.6	14.2	40	ENE	11.9	5.3			0			0.165	4.2		Prof. L. Toscani.
Urbino	28.63	727.3	30.18	766.6	53.6	12.0	82	NE			2		10			0	0		Prof. P. Serpieri.
Pesaro	30.06	763.4	30.10	764.6	55.4	13.0	96	N	19.2	8.6			10	N		0.850	21.6		Prof. Luigi Guidi.
Ancona	29.98	761.5	30.09	764.2	61.5	16.4	66	SSE			4		10			0.094	2.4		Prof. F. DeBosis.
Grosseto	29.93	760.2	30.04	763.0	65.5	18.6	82	N			6		9	NE		0.362	9.2		Avv. P. Ponticelli.
Rome	29.80	756.8	29.97	761.2	72.3	22.4	59	WSW	5.6	2.5			10			0.043	1.1		Profs. P. Secchi & L. Respighi
Naples, O. U.	29.84	757.9	30.04	762.9	69.4	20.8	76	SE			2		8	W		0.732	18.6		Prof. L. Palmieri.
Lecce	29.65	753.0	29.89	759.3	73.4	23.0	70	WNW	2.5	1.1			10	W		0.528	13.4		Prof. C. DeGiorgi.
Cosenza	29.16	740.6	30.03	762.7	74.5	23.6	71	NW	0.7	0.3			10			1.516	38.5		Prof. F. D. Conti.
Cagliari	29.76	755.8	29.94	760.5	60.8	16.0	95	N			4		10	W		0.098	2.5		Prof. A. Pacinotti.
Riposto, (Sicily)	29.87	758.8	29.92	760.0	78.8	26.0	76	ENE			2		8	NE		0	0		Prof. F. Cafiero.
Palermo	29.74	755.5	29.99	761.8	72.9	22.7	70	N	15.4	6.9			10			0	0		Prof. G. Cacciatore.
Caltanissetta	28.07	713.0	29.94	760.5	80.6	27.0	41	WNW			2		8			0	0		Prof. A. Pagani.
Syracuse	29.85	758.1	29.92	760.0	80.2	26.8	71	NE			4		7	W		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.49	749.1	30.05	763.2	63.1	17.3	90	NE	0.7	0.3			10	N		0.236	6.0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,14[illegible].3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.83	757.7	29.93	760.1	65	18.3	92	NE	3.2	1.4		9ck				0.012	0.31	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.2	30.16	766.1	53.4	11.9	84	Calm	0	0		0	0			0.09	2.2	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tiacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.34	770.5	30.34	770.5	56.8	13.8		SSW			3					0	0		
Groningen	30.24	768.2	30.30	769.6	53.4	11.9		SW			2					0	0		
Helder	30.26	768.6	30.26	768.6	55.2	12.9		SSW			4					0.020	0.5		
Utrecht	30.27	768.8	30.32	770.0	57.7	14.3	58	SSW			3		5			0	0	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.00	762.1	30.06	763.5	50.0	10.0	87	SW	4.5	2.0			8			0.551	14.0	Raining	
Brönö	29.68	753.8	29.72	754.8	45.7	7.6	88	SW	9	4			10			Inap.	Inap.	Light rain	
Christiania	29.83	757.7	29.98	761.5	46.9	8.3	66	W	0	0			9			0	0		
Tromsö	29.61	752.2	29.66	753.3	37.4	3 0	83	SW	4	2			10			0.071	1.8		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.85	758.3	30.04	763.1	69.6	20.9	80	S	5.6	2.5			7			0	0		
Campo Major	28.98	736.1	29.98	761.5	73.9	23.3	59	ESE	8.7	3.9			9	ESE		0	0	Solar halo	Dr. J. A. Sampaio
Funchal, (Madeira)	29.91	759.7	30.00	761.9	73.2	22.9	60	SE	4.9	2.2			6			0	0		Dr. A. M. R. dos Santos.
Lisbon, Observatory	29.62	752 3	29.97	761.2	71.8	22.1	64	NE	9.8	4.4			5	SSW		0	0	Solar halo	Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	30.01	762.2	30.08	764.0	70.9	21.6	66	SE	6.9	3.1			6			0	0		The Staff.

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India, Ponta Delgada.				30.10	764.6	70.3	21.3	88	ESE			3		5	E	E	6	ESE	D. clouds	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.72	755.0	30.16	766.1	41.7	5.4	91	NNW	13	6			10						Astronomical Obs.
Wilna	29.60	751.7	30.02	762.5	45.1	7.3	78	W	4	2			9						Astronomical Obs.
Dorpat	29.68	753.9	29.93	760.2	44.8	7.1	55	NW	7	3			7						Physical Cabinet.
St. Petersburg	29.80	756.9	29.82	757.3	42.4	5.8	62	WNW	16	7			10						Central Physical Obs
Kuopio	29.38	746.3	29.71	754.5	43.3	6.3	74	NW	7	3			0						Ch. Forsten.
Kieff	29.26	743.1	29.90	759.4	44.1	6.7	67	NNW	7	3			10						Physical Cabinet
Nikolaiev	29.90	759.4	29.97	761.2	57.6	14.2	65	Calm	0	0			3						Kurdakof.
Kertch	29.87	758.8	29.89	759.3	60.1	15.6	92	WNW	2	1			10						Lagorio.
Moscow	29.10	739.0	29.65	753.1	44.1	6.7	91	SSW	7	3			10						Meteorological Obs.
Lugan	29.59	751.5	29.79	756.6	58.5	14.7	51	NW	2	1			5						Meteorological Obs.
Archangel	29.62	752.3	29.64	752.8	36.0	2.2	93	SW	22	10			10						Ogorodnikof.
Tiflis	28.41	721.5	29.73	755.2	85 8	29.9	29	NW	13	6			10						Physical Observatory.
Astrakhan	29.84	758.0	29.76	755.9	64.6	18.1	79	NNW	7	3			10			Blank	Blank		Sebastianof.
Kasan	29.36	745.8	29.63	752.7	46.0	7.8	59	NE	9	4			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	28.93	734.7	29.89	759.1	41.4	5.2	71	Calm	0	0			10						Meteorological Obs.
Nukus	29.57	751.1	29.79	756.7	82.4	28.0	35	SE					2						
Kasaly																			Bobrof.
Tashkend	28.34	719.7	30.00	761.9	68.0	20.0	86	Calm	0	0			3						Michelson.
Barnaul	29.27	743.4	29.76	755.8	75.6	24.2	37	Calm	0	0			7						Meteorological Obs.
Yeniseisk	29.21	742.0	29.36	745.7	60.4	15.8	94	WSW	4	2			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.01	762.3	30.15	765.9	65.8	18.8	65	S	13	6			4						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock	30.01	762.3	30.05	763.2	54.5	12.5	81	NW	13	6			9n					Raining	
Nikolaievsk, on the Amoor					45.9	7.7	90	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.84	707.0			66.9	19.4	65	NE	12.0	5.34			10			0	0	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.81	757.3	29.90	759.4	78.3	25.7	88	Calm	0	0		0	1k			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.88	759.0	29.98	761.4	72.0	22.2	81	SSE	10.1	4.5		0	10		SE	0.038	1.0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.84	757.8	83.5	28.6	83	SE	0	0		2cs	2k			0	0	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published: wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea level. Inches.	Barometer. Reduced to sea level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.73	755.1	29.77	756.1	40.6	4.8	59	SW			2		5			0	0		
Umea	29.68	753.9	29.73	755.2	49.6	9.8	71	NNW			2		10			0.024	0.6		
Hernosand	29.72	755.0	29.78	756.3	51.8	11.0	63	W			2		9			0	0		
Stockholm	29.74	755.3	29.91	759.8	48.6	9.2	44	W			4		3			0	0		
Wisby	29.95	760.8	30.01	762.3	48.9	9.4	78	WNW			6		0			0.004	0.1		
Sub-Series.																			
Upsala	29.82	757.5	29.90	759.4	51.3	10.7	47	W	8.3	3.7			2			0	0		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.77	730.8	30.20	767.1	53.1	11.7	47	NE			2		1			0	0	Clear	The Observatory.
Zurich	28.63	727.1	30.28	769.1	49.5	9.7	58	N			1		2			0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +4.1 mm; Thermometer, —4.8 cent.; Relative Humidity, —19 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.95	760.7	62.1	16.7	82	N	17	7.5			10		N	0.673	17.1		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.97	761.3	70.5	21.4		NE			4		10						B. Stefanides.
Valona			30.09	764.3	82.4	28.0		E			1		10			0	0	Covered	A. Bertrand.
Varna			29.96	761.0	57.2	14.0		E			2		10						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.82	757.4	29.93	760.2	88.0	31.1	70	W			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.93	760.2	30.00	762.0	55.9	13.3	93	NE	1	0.4			9			0.73	18.5		Hon. J. Ferguson.
Brockville, Ontario			29.99	761.7	67	19.4		SW	5	2.2		0	5s		SW	0	0	Fair	W. R. Bigg.
*Chatham, N. B.			30.01	762.2	56	13.3	93	NW	7	3.1			10ks		NW	0.40	10.2	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.99	761.7	62	16.7	86	W	8	3.6		5c	0	Calm		0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.74	755.4	29.93	760.2	68.5	20.3	79	SW			3		10s			Inap.	Inap.	Dull	James Smith, M. A.
Dalhousie, N. B.	29.99	761.7	30.02	762.5	54	12.2	100	W			1					0.94	23.9	Threatening	H. A. Johnson.
Esquimault, B. C.	29.97	761.2	30.02	762.5	46.3	7.9	100	Calm	0	0			10			0.27	6.9	Rainy	W. H. Bevis.
*Father Point, Quebec			30.01	762.2	43	6.1	96	W	5	2.2			Fog		W	0.52	13.2	Foggy	J. McWilliams.
Fredericton, N. B.	29.99	761.7	30.06	763.5	60.5	15.8	85	SE	1	0.4			10ks		W	Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.89	759.2	48	8.9	92	SE	14	6.3		2c	Haze	SW	SW	0	0	Fair	James Stewart.
Goderich, Ontario	29.31	744.5	30.08	764.0	65.5	18.6	89	NW			2	5ck	2s	W		0	0	Fair	H. J. Strang, M. A
Granton, Ontario	28.98	736.1	30.06	763.5	63	17.2	94	W			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S.			30.05	763.3	58	14.4	97	W	6	2.7			10n			0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.73	755.3	30.09	764.3	68.2	20.1	80	SW			1					0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.18	766.6	30.20	767.1	50	10.0	80	SE			2		10n			0.01	0.3	Raining	E. Weedon.
*Kingston, Ontario	29.71	754.6	30.07	763.8	67	19.4	89	SW	15	6.7		8c	0	SW		0	0	Fair	S. Woods, M. A
*Montreal, Quebec	29.74	755.4	29.91	759.7	66	18.9	86	SW	12	5.4		8k	5ks			0.34	8.6	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.04	763.0	61	16.1	88	W	12	5.4		2ck	0	W		0.28	7.1	Fair	Rev. R. Mosley
Peterboro, Ontario	29.31	744.5	30.03	762.7	66.7	19.3	84	W			1	0	7ks			0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.40	746.7	30.07	763.8	66	18.9	95	SW	4	1.8		2ck	0	SW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.95	760.7	30.01	762.2	55.5	13.1		Calm	0	0						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.45	748.0	30.09	764.3	58	14.4	99	W	1	0.4		2k	0	W		0	0	Clear	M. Payne.
*Quebec, Quebec			29.96	761.0	52	11.1	100	NE	13	5.8			10n		NE	0.31	7.9	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario			29.94	760.5	63	17.2	91	NW	8	3.6		2cs	5s	W		0.22	5.6	Fair	W. H. McIntyre.
St. John, N. B.	29.93	760.2	30.09	764.3	55	12.8	93	Calm	0	0			Fog			0.01	0.3		G. Murdock, C. E.
*Saugeen, Ontario	29.37	746.0	30.05	763.3	61	16.1	87	NW	5	2.2			10n			0.20	5.1	Cloudy	K. Stewart.
Stayner, Ontario			29.99	761.7	64	17.8	94	NW	5	2.2			10n		NW	0.01	0.3	Cloudy	R. J. Cole.
Stratford, Ontario	28.80	731.5	30.04	763.0	62.0	16.7	93	W	7	3.1		2cs	0			0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.97	761.2	30.00	762.0	62	16.7	83	SW	13	5.8		Haze	2ks		SW	Inap.	Inap.	Fair	T. C. Hill.
*Toronto, Ontario	29.70	754.4	30.07	763.8	64	17.8	80	W	2	0.9		2ck	0	W		0	0	Fair	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					50.5	10.3	100	SE					10n			0	0	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.88	758.9	30.10	764.5	64	17.8	78	S	6	2.7		5c	0	NW		0	0	Fair	
Alpena, Michigan	29.45	748.0	30.10	764.5	55	12.8	93	NW	1	0.4		2ck	2s	NW	NW	0.36	9.1	Fair	
Atlantic City, New Jersey	30.19	766.8	30.21	767.3	67	19.4	100	Calm	0	0		2k	Haze	W		0	0	Fair	
Augusta, Georgia	29.92	760.0	30.10	764.5	68	20.0	89	NE	6	2.7		0	0			0.03	0.8	Clear	
Baltimore, Maryland	30.16	766.1	30.21	767.3	64	17.8	83	NW	2	0.9		2k	Fog	SW	Calm	0	0	Fair	
Barnegat, New Jersey	30.18	766.6	30.20	767.1	70	21.1	90	SW	2	0.9		2k	Fog	Calm	Calm	0	0	Fair	
Bismarck, Dakota	27.93	709.4	29.53	750.0	56	13.3	80	S	11	4.9			10s		S	0	0	Cloudy	
Boise City, Idaho	27.21	691.1	29.82	757.4	48	8.9	56	NW	4	1.8		0	5s		NW	Inap	Inap.	Fair	
Boston, Massachusetts	29.97	761.2	30.12	765.0	67	19.4	74	SW	12	5.4		1c	Haze	Calm		0	0	Clear.	
Brackettville, Texas	28.79	731.3	29.77	756.1	76	24.4	72	SE	4	1.8			10s		Calm	0	0	Cloudy	
Breckenridge, Minnesota	28.88	733.5	29.87	758.7	45	7.2	100	SE	6	2.7		0	5ks		Calm	0	0	Fair	
Brownsville, Texas	29.87	758.7	29.94	760.5	78	25.6	82	Calm	0	0		10ck	0	Calm		Inap.	Inap.	Cloudy	
Buffalo, New York	29.38	746.2	30.06	763.5	67	19.4	79	S	4	1.8		2ck	0	SW		0.48	12.2	Fair	
Burlington, Vermont	29.78	756.4	30.03	762.7	67	19.4	68	S	8	3.6			10s		S	0	0	Cloudy	
Cairo, Illinois	29.68	753.9	30.07	763.8	68	20.0	84	Calm	0	0		5ck	0	SE		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.69	677.9	30.28	769.1	48	8.9	49	Calm				0	0			0	0	Clear.	
Campo, California																			
Cape Hatteras, N. Carolina	30.04	763.0	30.04	763.0	73	22.8	85	NE	18	8.0			10n		E	0.32	8.1	Light rain	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	72	22.2	90	E	6	2.7		5k	0	SE		0	0	Fair	
Cape Lookout, N. Carolina	30.16	766.1	30.17	766.3	76	24.4	76	E	13	5.8		5k	0	E		0.56	14.2	Fair	
Cape May, New Jersey	30.16	766.1	30.19	766.8	69	20.6	90	SE	2	0.9		0	0			0	0	Clear.	
Charleston, South Carolina	29.99	761.7	30.06	763.5	72	22.2	90	NE	11	4.9		0	5s		NE	Inap.	Inap.	Fair	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	43	6.1	42	W	4	1.8		5c	0	W		0	0	Fair	
Chicago, Illinois	29.31	744.5	29.97	761.2	68	20.0	84	SW	1	0.4		8k	0	SW		0.05	1.3	Fair	
Cincinnati, Ohio	29.40	746.7	30.03	762.7	66	18.9	78	SE	1	0.4		2k	Fog	S	Calm	Inap.	Inap.	Foggy	
Cleveland, Ohio	29.41	747.0	30.11	764.8	65	18.3	81	SE	6	2.7		10c;k	0	Calm; SE		0.01	0.3	Cloudy	
Concho, Texas	28.02	711.7	29.63	752.6	72	22.2	85	SW	8	3.6		8cs		SW		0	0	Cloudy	
Corsicana, Texas	29.51	749.5	29.97	761.2	66	18.9	94	SE	3	1.3		2cs	0	Calm		0	0	Clear.	
Davenport, Iowa	29.35	745.5	29.97	761.2	66	18.9	84	S	1	0.4		7c	Sm'e	Calm	Calm	0	0	Fair	
Denison, Texas	29.16	740.7	29.94	760.5	68	20.0	90	SE	7	3.1		8k	0	S		0.24	6.1	Clearing	
Denver, Colorado	24.74	628.4	29.96	761.0	43	6.1	43	S	6	2.7		0	5s		NW	0	0	Fair	
Detroit, Michigan	29.39	746.5	30.04	763.0	64	17.8	88	SW	4	1.8		0	1s		SW	0	0	Clear.	
Dodge City, Kansas	27.31	693.7	29.55	750.6	54	12.2	93	W	6	2.7		0	5s		W	0.20	5.1	Fair	
Dubuque, Iowa	29.28	743.7	29.96	761.0	63	17.2	83	Calm	0	0		5cs	0	SW		0	0	Fair	
Duluth, Minnesota	29.38	746.2	30.06	763.5	54	12.2	93	E	16	7.2			10s		E	0	0	Threatening	
Eagle Pass, Texas	29.14	740.1	29.85	758.2	75	23.9	76	NE	4	1.8			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.96	761.0	30.03	762.7	56	13.3	80	Calm	0	0		10c;hz	Haze	Calm		0	0	Hazy	
Erie, Pennsylvania	29.38	746.2	30.07	763.8	66	18.9	84	S	5	2.2		5k	Sm'e	SW		0.13	3.3	Fair	
Escanaba, Michigan	29.46	748.3	30.11	764.8	54	12.2	87	NE	14	6.3			10s		NE	0	0	Cloudy	
Florence, Arizona	28.33	719.6	29.93	760.2	74	23.3	18	N				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.09	611.9	30.09	764.3	50	10.0	2	NW	7	3.1		0	0			0	0	Clear	
Fort Craig, New Mexico	25.56	649.2			43	6.1	36	NW	3	1.3		0	0			0	0	Clear.	
Fort Gibson, Indian Ter	29.35	745.5	29.87	758.7	64	17.8	89	SE	14	6.3			10s		SW	0.49	12.4	Cloudy	
Fort Griffin, Texas	28.66	728.0	29.88	758.9	71	21.7	75	SE	8	3.6		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.69	728.7	29.77	756.1	64	17.8	89	Calm	0	0		0	5s		W	0.40	10.2	Fair	
Fort Sully, Dakota	28.06	712.7	29.67	753.6	53	11.7	93	SE	8	3.6			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.93	760.2	29.98	761.5	76	24.4	90	N	1	0.4		8c;k	0	W; Calm		0	0	Cloudy	
Grand Haven, Michigan	29.39	746.5	30.02	762.5	66	18.9	90	S	3	1.3		1k	Sm'e	Calm	Calm	0	0	Clear	
Indianapolis, Indiana	29.29	744.0	30.05	763.3	63	17.2	88	Calm	0	0		5cs	Sm'e	Calm		0	0	Fair	
Indianola, Texas	29.96	761.0	29.98	761.5	77	25.0	82	Calm	0	0		5k	2s	SE	SE	0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	29.94	760.5	29.96	761.0	75	23.9	90	NE	5	2.2			10ks		NE	1.23	31.2	Threatening	
Keokuk, Iowa	29.33	745.0	29.92	760.0	68	20.0	84	S	4	1.8		2k	5s	S	S	0	0	Fair	
Key West, Florida	29.85	758.2	29.88	758.9	82.0	27.8	74	E	3	1.3		1k	1ks	E	Calm	Inap.	Inap.	Clear	
Kittyhawk, North Carolina	30.13	765.3	30.15	765.8	73	22.8	100	NE	10	4.5		1ck	Fog	Calm		0	0	Fair	
Knoxville, Tennessee	29.15	740.4	30.15	765.8	59	15.0	87	NE	3	1.3		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.22	742.2	29.93	760.2	64	17.8	94	NE	3	1.3			10n		NE	0.13	3.3	Light rain	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	50	10.0	32	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					78	25.6	77	SE	4	1.8		10ck	0	S		0	0	Cloudy	
Leavenworth, Kansas	29.01	736.8	29.82	757.4	64	17.8	89	SE	5	2.2			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.52	749.8	29.85	758.2	60	15.6	66	NE	5	2.2		0	0			0	0	Clear	
Louisville, Kentucky	29.53	750.0	30.08	764.0	66	18.9	89	S	3	1.3		5c	Fog	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.52	749.8	30.23	767.1	62	16.7	77	Calm	0	0		0	0			0	0	Clear	
Maricopa Wells, Arizona					47	8.3	48	Calm				0	0			0	0	Clear.	
Marquette, Michigan	29.41	747.0	30.11	764.8	52	11.1	79	N	4	1.8			10s		Calm	0	0	Cloudy	
Mason, Texas	28.34	719.8	30.04	763.0	69	20.6	75	Calm	0	0		0	2s			0	0	Fair	
Memphis, Tennessee	29.73	755.1	30.04	763.0	70	21.1	84	E	4	1.8		0	2ks;fg		SE; Calm	0	0	Clear.	
Milwaukee, Wisconsin	29.37	746.0	30.04	763.0	59	15.0	94	W	4	1.8			Fog			0	0	Foggy	
Mobile, Alabama	29.97	761.2	30.01	762.2	69	20.6	90	NE	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	29.83	757.7	30.06	763.5	68	20.0	90	NE	4	1.8		0	Haze		Calm	0	0	Clear.	
Morgantown, West Virginia	29.11	739.4	30.15	765.8	60	15.6	81	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.95	608.6	30.32	770.1	48	8.9	100	NW	35	15.6			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.58	751.3	30.10	764.5	65	18.3	83	Calm	0	0		5k	0	SW		0	0	Fair	
New Haven, Connecticut	30.06	763.5	30.18	766.6	69	20.6	84	SW	8	3.6		0	Haze			0	0	Clear	
New London, Connecticut	30.13	765.3	30.18	766.6	70	21.1	79	SW	8	3.6		0	1s		SW	0	0	Clear	
New Orleans, Louisiana	29.93	760.2	29.99	761.7	73	22.8	93	NE	4	1.8		0	Fog		NE	0	0	Clear	
Newport, Rhode Island	30.13	765.3	30.18	766.6	64	17.8	88	SW	10	4.5		2k	0	SW		0	0	Clear	
New York, New York	30.03	762.7	30.20	767.1	61	16.1	94	W	6	2.7		4	Fog			0	0	Foggy	
Norfolk, Virginia	30.10	764.5	30.16	766.1	70	21.1	95	NE	5	2.2		0	Fog		Calm	0	0	Clear	
North Platte, Nebraska	26.98	685.3	29.49	749.0	56	13.3	93	S	5	2.2			10s		S	0	0	Cloudy	
Olympia, Washington Ter.	30.02	762.5	30.06	763.5	45	7.2	92	S	6	2.7			10s		Calm	0.49	12.4	Cloudy	
Omaha, Nebraska	28.76	730.5	29.80	756.9	63	17.2	88	SE	2	0.9			10s		S	1.06	26.9	Cloudy	
Oswego, New York	29.73	755.1	30.05	763.3	68	20.0	74	S	8	3.6		5ck	2s	NW	W	0.01	0.3	Cloudy	
Pembina, Dakota	29.06	738.1	29.88	758.9	48.5	9.2	92	SE	8	3.6		2c	5s	Calm	SE	0	0	Fair	
Philadelphia, Pennsylvania	30.17	766.3	30.22	767.6	61	16.1	100	SW	3	1.3			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					56	13.3	23	N				0	0			0	0	Clear.	
Pike's Peak, Colorado	17.88	454.1	30.09	764.3	18	— 7.8	67	N	32	14.3		0	0			0.35	8.9	Clear	
Pioche, Nevada	24.09	611.9	29.86	758.4	52	11.1	17	S	1	0.4		0	0			0	0	Clear.	
Pittsburg, Pennsylvania	29.32	744.7	30.12	765.0	59	15.0	87	Calm	0	0			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.39	746.5	30.04	763.0	65	18.3	83	SW	3	1.3		2c	Sm'e	Calm		0	0	Smoky	
Portland, Maine	29.99	761.7	30.04	763.0	66	18.9	78	W	10	4.5		8ck	Haze	W		0	0	Cloudy	
Portland, Oregon	30.07	763.8	30.17	766.3	47	8.3	100	S	2	0.9		2ck	2c	N	N	0.87	22.1	Fair	
Prescott, Arizona					44	6.7	30	Calm				0	0			0	0	Clear.	
Punta Rassa, Florida	29.90	759.4	29.92	760.0	78	25.6	65	NE	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.62	752.3	29.98	761.5	62	16.7	51	NW	7	3.1		0	0			0	0	Clear	
Rochester, New York	29.44	747.8	30.03	762.7	67	19.4	79	SW	8	3.6		2k	0	SW		0.31	7.9	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.60	751.8	30.18	766.6	48.5	9.2	96	W	3	1.3		5ck	0	W		0.05	1.3	Fair	
Sacramento, California	29.87	758.7	29.95	760.7	55	12.8	70	N	2	0.9		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.45	748.0	30.01	762.2	68	20.0	84	SE	8	3.6			10s		Calm	0	0	Cloudy	
St. Marks, Florida	29.95	760.7	29.96	761.0	73	22.8	85	NE	8	3.6			10s		NE	0	0	Cloudy	
St. Paul, Minnesota	29.09	738.9	29.89	759.2	60	15.6	82	E	10	4.5			10n		Calm	0.20	5.1	Light rain	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.59	650.0	29.92	760.0	57	13.9	20	NE	6	2.7		0	0			0	0	Clear	
San Antonio, Texas	29.26	743.2	29.83	757.7	70	21.1	79	NE	4	1.8		2ck	5ks	NW	NE	0	0	Cloudy	
San Diego, California	29.82	757.4	29.89	759.2	60	15.6	82	NE	3	1.3		0	0			0	0	Clear	
Sandusky, Ohio	29.44	747.8	30.09	764.3	69	20.6	84	SW	2	0.9		1c	8ks	Calm	SW	0.09	2.3	Fair	
Sandy Hook, New Jersey	30.18	766.6	30.21	767.3	64	17.8	94	SW	5	2.2			Fog		SW	0	0	Foggy	
San Francisco, California	29.93	760.2	30.00	762.0	57	13.9	87	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.33	592.6	29.87	758.7	40	4.4	32	NE	4	1.8		0	Haze			0	0	Clear	
Savannah, Georgia	29.93	760.2	30.02	762.5	72	22.2	90	E	8	3.6			10s		E	Inap.	Inap.	Cloudy	
Shreveport, Louisiana	29.78	756.4	30.00	762.0	68	20.0	95	Calm	0	0			Fog		Calm	0	0	Foggy	
Smithville, North Carolina	30.06	763.5	30.09	764.3	73	22.8	90	N	10	4.5		0	2ks		N	2.07	52.6	Fair	
Springfield, Massachusetts	29.96	761.0	30.08	764.0	65	18.3	78	S	4	1.8		0	0			0	0	Clear	
Stanwix, Arizona					54	12.2	49	Calm				0	0			0	0	Clear	
Stockton, Texas					56	13.3	87	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.05	763.3	30.11	764.8	62	16.7	94	SW	16	7.2		1cs	0	SW		0	0	Foggy	
Toledo, Ohio	29.41	747.0	30.07	763.8	67	19.4	90	Calm	0	0		5c	Haze	Calm	Calm	0	0	Fair	
Tucson, Arizona	27.59	700.8	30.14	765.5	65	18.3	48	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	29.98	761.5	30.01	762.2	73	22.8	95	NE	22	9.8			10s		NE	0.40	10.2	Cloudy	
Umatilla, Oregon	29.74	755.4			47	8.3	71	SW	12	5.4		0	0			0.35	8.9	Clear	
Vicksburg, Mississippi	29.79	756.7	30.04	763.0	70	21.1	90	SE	2	0.9		5k	2s	S	Calm	0	0	Fair	
Virginia City, Montana	24.11	612.4	29.59	751.6	39	3.9	72	SW	16	7.2		0	0			0.30	7.6	Clear	
Visalia, California	29.58	751.3	29.95	760.7	51	10.6	78	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	30.10	764.5	30.22	767.6	62	16.7	88	Calm	0	0		5cs	Fog	W		0	0	Foggy	
Wickenburg, Arizona					49	9.4	14	NW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.00	762.0	30.08	764.0	72	22.2	85	NE	6	2.7		0	0			0	0	Clear	
Winnemucca, Nevada	25.66	651.8	30.02	762.5	50	10.0	51	SW	8	3.6		2k	0	Calm		0	0	Fair	
Wood's Holl, Mass	30.14	765.5	30.20	767.1	67	19.4	90	SW	8	3.6		0	Fog		SW	0	0	Light fog	
Yankton, Dakota	28.60	726.4	29.86	758.4	55	12.8	90	NW	3	1.3			10s		Calm	0.13	3.3	Cloudy	
Yuma, Arizona	29.72	754.9	29.88	758.9	60	15.6	20	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.10	764.5	30.16	766.1	30.0	—1.1	95	S	10	4.5		1c	0	SE		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.84	757.9	29.86	758.4	81	27.2	78	Calm	0	0		2c	0	SE		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.99	761.7	30.00	762.0	83	28.3	83	SE	12	5.4		10c	5n	SE		0.40	10.2		James Gall.
Santiago de Cuba, W. I.	29.87	758.7	29.88	758.9	80	26.7	86	Calm	0	0		4c	0			0	0		T. W. Beattie.
Navassa, W. I.	29.78	756.4	29.86	758.4	83.5	28.6		E			4					0.03	0.8	Cloudy	F. M. Everett.
St. Thomas, W. I.					85	29.4	76	E				2c	5s	E		0	0		G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.78	756.4	29.80	756.9	80	26.7	87	E				2k	0					Clear	L. V. Bigard.
Bridgetown, Barbados, W. I.	29.98	761.5	30.00	762.0	80	26.7	87	E					10ks			0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.99	761.7	84	28.9	75	E			3	4c	0	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.18	639.6			64.8	18.2	84	Calm			0	1ck	0			0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,206 ft., or 672 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.00	762.0	62	16.7	60	15.6	65	SW	7	3.1			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.12	765.0			76	24.4	77	NNE	7	3.1			3		SE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.14	765.5	70	21.1	67	19.4	69	SW			1					0	0			Smoky	
Naval Hospital, Yokohama, Japan	29.89	759.2	69	20.6	66	18.9	89	NE			3		8k		NNE	0.44	11.2			Clearing	
Adams, Montevideo, Uraguay	30.09	764.3	51	10.6	51	10.6	65	NNE			1		9		W	0	0			D. clouds	
Alert, Hakodadi, Japan	30.02†	762.5†	63	17.2	63	17.2	83	NNW			2		6		NW					D. clouds	
Alliance, Constantinople, Turkey.	30.04	763.0	74	23 3	66	18.9	84	NNE			2–3		10		N&E					Raining	
Ashuelot, Che-foo, China	30.20	767.1	80	26.7	68	20.0	60	N			1–2		0					Smooth		Blue sky	
Canonicus, New Orleans, La	30.00	762.0	54	12.2	73	22.8	90	NE			1		0							Clear	
Colorado, New York, N. Y.	30.28	769.1	69	20.6	65	18.3	84	SSW	6	2.7			4		SSW	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	30.03	762.7	66	18.9	63	17.2	78	N			3		10		N			Smooth		Rainy	
Essex, Santa Cruz, Tenerife	29.98	761.5	72	22.2	82	27.8	83	ENE			3		3					Smooth	N&E	D. clouds	
Franklin, Norfolk, Va.	30.22	767.6	69	20.6	73	22.8	95	NE	4.8	2.1			2		NE	0.1	3.			Clear	
Frolic, N. 5° 42′, W. 50° 02′	30.13	765. 3	85	29.4	90	32.2	77	SSE			0–1		4k		Calm	0	0	Smooth		D. clouds	
Gettysburg, N. 40° 12′, E. 12° 15′	29.92‡	760.0‡			71	21.7	100	WSW			3		9		W	Blank	Blank	Moderate.	NW	D. clouds	
Kearsarge, Singapore, India	29.82	757.4			84	28.9	100	ENE			2		4			0	0	Smooth		Misty	
Lackawana, Port Townsend, W. T.	30.08	764.0			49	9.4	78	S			1		9		S					D. clouds	
Marion, Smyrna, Turkey	29.91	759.7	85	29.4	86	30.0	54	NW			2		1		Calm	0	0	Smooth		D. clouds	
Monocacy, Hakodadi, Japan	29.89	759.2	64	17.8	62	16.7	83	NNW			3		5		NNW	0	0	Smooth		D. clouds	
Monongahela, N. 38° 57′, W. 67° 50′	30.37	771.4	74	23.3	74	23.3	81	SE			0–1		cs					Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.29	769.4			72	22.2	90	NE	19	8.5			8			0	0			Squally	
Omaha, S. 30° 14′, W. 77° 11′	30.12	765.0	60	15.6	60	15.6	88	ESE	17	7.6			0			0	0	Light	SE	Clear	
Onward, Callao, Peru	30.00	762.0	68	20.0	66	18.9	89	Calm			0		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.25	768.3	69	20.6	64	17.8	89	WSW			1		5		WSW					Foggy	
Palos, Ningpo, China	30.19	766.8	69	20.6	66	18.9	84	NW			2		8		W	0	0			Cloudy	
Pensacola, Mare Island, Cal.	30.00	762.0			64	17.8	83	SW			1		1		Calm	0	0			Pleasant	
Plymouth, New York, N. Y.	30.50	774.7	74	23.3	64	17.8	94	WSW			0–1		Fog							Foggy	
Ranger, Nagasaki, Japan	30.20	767.1			68	20.0	79	E			0–1		0					Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.84	757.9			77	25.0	100	ESE			1		7		E					D. clouds	
Santee, Annapolis, Md.	30.29	769.4	70	21.1	67	19.4	95	SW			1					0	0			Dense fog	
St. Louis, League Island, Pa	30.14	765.5	64	17.8	62	16.7	94	Calm	0	0			10			0	0			Foggy	
Tennessee, Hakodadi, Japan	30.08	764.0	69	20.6	62	16.7	77	NNW	7	3.1			7		N&W			Smooth		D. clouds	
Trenton, Marseilles, France	30.12	765.0	68	20.0	66	18.9	59	SE	2	0.9			5		S&E	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.91	759. 7	86	30.0	86	30.0	58	WNW			3		4		WNW					Hazy	
Wabash, Boston, Mass	30.18	766.6	68	20.0	68	20.0	84	WSW	6	2.7			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.44†	773.2†	66	18.9	66	18.9		Calm			0		4							Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 45° 54′, E. 170° 42′			30.02*	762.5*	50	10.0	86	NE			6		10		NE	Rough	NE	Overcast	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 26′, E. 139° 39′					70	21.1		NE			3		9		NE	Smooth	N	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pöhle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 41° 54′, W. 44° 35′			30.19	766.8	53.6	14.4	88	NE			3					Tranq'l	N	Blue sky	Capt. A. Jaeger.
S. S. Ohio, N. 40° 24′, W. 68° 32′			30.34	770.6	64.0	17.8	94	WSW			1					Smooth		Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana																			Captain Sargent.
S. S. Ohio, N. 50° 03′, W. 38° 55′			29.82*	757.4*	53	11.7	100	NNW			7		10		N	Large	N	Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.01	762.2	73	22.8	85	NE	9	4.0		8d		NE				Cloudy	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 27, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.03	762.8	75.2	24.0	73	E			2		3			0.354	9.0	Fair	Michel.
Algiers			29.98	761.4	66.2	19.0	100	NNE			1		10			0.283	7.2	Hidden	Peter.
La Calle			29.92	760.0	79.5	26.4	78	NW			3		6			0.039	1.0	Fair	Fleury.
Tunis			29.92	760.0	78.8	26.0		NE			3		6			0	0	Fair	Jacques.
Sfax			29.93	760.2	84.2	29.0		NW			4		9			0	0	Hidden	Husson.
Saida			29.99	761.8	66.9	19.4		WNW			3		2			0.106	2.7	Clear	Millot.
Tebessa			29.92	760.0	82.2	27.9		SW			2		2			0	0	Clear	Bourgeois.
Geriville			29.98	761.4	69.4	20.8	35	NE			2		3			0	0	Fair	Lemaillot.
Laghouat			29.98	761.5	79.7	26.5	40	W			4		2			0	0	Clear	François.
Biskra			29.98	761.6	90.1	32.3	52	NW			2		5			0	0	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.74	755.5	30.30	769.6	54.9	12.7	39	NE			4		3			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.56	750.8	30.34	770.7	49.6	9.8	47	W					5			0	0		Dr. Wierzbiski.
Eperies	29.41	747.0	30.30	769.6	51.6	10.9	53	N			1		10s		Calm	0	0		Julius Mikolik.
Gratz	29.08	738.6	30.36	771.1	49.5	9.7	69	ESE			2		5			0	0		Andreas Rospini.
Hermannstadt	28.83	732.3	30.27	768.9	50.0	10.0	48	NE			2		2			0	0		Prof. Reissenberger.
Kremsmünster	28.93	734.8	30.30	769.7	47.1	8.4	60	E			2		0			0	0		Prof. C. Wagner.
Lemberg	29.24	742.7	30.25	768.3	46.8	8.2	74	NW			2		5			0.008	0.2		Dr. T. Stanecki.
Pola	30.07	763.6	30.18	766.5	59.4	15.2	34	ENE			5		0			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	30.02	762.5	30.30	769.7	54.0	12.2	48	N			1		6			0	0		Karl Stancel.
Trieste	30.15	765.8	30.25	768.4	55.4	13.0	69	ENE			3		0			0	0	Clear	P. Busin.
Vienna	29.63	752.7	30.35	770.8	50.7	10.4	62	Calm			0		2			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.84	732.6	30.37	771.5	50.4	10.2	43	E			1		0			0	0		Royal Observatory.
Brussels	30.17	766.2	30.37	771.4	54.9	12.7	78	SSW			1		4		N	0	0		
Furnes	30.34	770.6	30.36	771.2	60.1	15.6	65	WNW			2		8			0	0		
Maeseyck	30.24	768.2	30.37	771.5	57.0	13.9	72	W			4		8			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.1 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	30.28	769.1	30.38	771.6	57.8	14.3		WNW	5	2.2			2			0	0	Blue sky	C. H. Thompson; W. Boswell.
Ardrossan	30.34	770.6	30.36	771.1	57	13.9		Calm			0		8					Overcast	William McNeil.
Armagh, Observatory			30.40	772.1	57.0	13.9		ESE	4	1.8			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.37	771.4	57.0	13.9		NNW	5	2.2			8					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.36	771.1	56.0	13.3		Calm			0		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.96	761.0	30.36	771.1	54.1	12.3		W			1		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)			29.94	760.5	83.8	28.8		NE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.39	771.9	59.0	15.0		NE			1		8					Foggy	H. Todd. [H.C
Cardington																			John McLaren.
Chatham, School M. E.	30.25	768.3	30.38	771.6	59.2	15.1		E			2		3					Fine	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.89	733.8	30.36	771.1	59.2	15.1		E			2		4					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.36	771.1	30.39	771.9	58	14.4		ENE			3		5					D. clouds	J. Mac Gowan.
Dover	30.36	771·1	30.39	771.9	58	14 4		NNE			3		0					Clear	J. Costello.
Eccles, (near Manchester)			30.37	771.4	55.7	13.2		ENE	0.8	0.4			10					Misty	Thomas Mackereth.
Falmouth, Observatory	30.13	765.3	30.35	770.9	59.6	15.3		ESE			1		2					D. clouds	The Staff.
Fort Napier, (Natal)	27.62	701.5	29.81	757.2	79.2	26.2		NW			4		8					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.00	762.0	82	27.8		N			0		5					Drizzling	
Galway, Queen's College			30.14	765.5	57	13.9		NW			1		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.92	760.0	29.96	761.0	71.6	22.0		E			4		9					Overcast	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	30.16	766.1	30.36	771.1	58.0	14.4		WNW			1		6					Hazy	D. G. Maclean.
Great Yarmouth	30.37	771.4	30.38	771.6	55	12.8		NE			1		0					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.21	767.3	30.39	771.9	59.6	15.3		NE			1		1					Blue sky	The Staff, for G. B. Airy.
Guernsey	30.12	765.0	30.34	770.6	60	15.6		ESE			1		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.34	770.6	62	16.7		NE			2		0			0	0	Fine	M. P. Moyle.
Holyhead	30.31	769.9	30.36	771.1	58	14.4		N			3		3					D. clouds	John Tilston.
Jersey	30.08	764.0	30.37	771.4	60.0	15.6		ESE			1		0					Blue sky	J. Fisher.
Kew, Observatory			30.39	771.9	49.7	9.8		NNE	1	0.4								Dense fog	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			30.39	771.9	56.2	13.4		NE			1		10					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.64	752.8	29.71	754.6	86.8	30.4		S			1		8					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	30.24	768.1	30.33	770.4	60	15.6		Calm			0		5					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.90	759.4	86.5	30.3		NW			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.21	767.3	30.40	772.1	57.5	14.2		E			1		0			0.003	0.08	Foggy	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.84	757.9	30.36	771.1	58.0	14.4		ENE			0–1		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.36	771.1	57	13.9		Calm			0		10					Foggy	F. Lucas
Plymouth	30.27	768.8	30.35	770.9	61.5	16.4		SSE			1		6					D. clouds	John Merrifield.
Roche's Point	30.33	770.4	30.37	771.4															W. Kennedy.
Saint Ann's Head	30.19	766.8	30.36	771.1	59	15.0		E			2		0					Blue sky	John C. Walker.
Sandwick Manse, (Orkneys)			30.33	770.4	53.5	11.9		W	21	9.4			1					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.20	767.1	60.0	15.6		NE			2		10			Blank	Blank	Misty	Sergt. W. H. Lyne.
Sheffield	30.14	765.5	30.38	771.6	54.9	12.7		NE			1		4			0	0	Hazy	W. F. Cooper.
Silloth Rectory	30.34	770.6	30.37	771.4	58.8	14.9	70	Calm			0		5			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					56.0	13.3		NE			0							Foggy	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lewis C. (Hebr.)			30.32	770.1	54	12.2		SW			1		0					Blue sky	John Smith.
Stratfield Turgiss	30.17	766 3	30.40	772.1	54.5	12.5		E			1		2					Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso			30.32	770.1	59	15.0		WNW			2		4					D. clouds	John Trotter.
Truro, Royal Institution			30.34	770.6	65	18.3		E			4		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.35	770.9	59.7	15.4		ESE	5	2.2			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		NE			1		0						Henry Mercer.
Cape Good Hope, Obs'y	29.97	761.2	30.01	762.2	58.6	14.8	83	SSE	23	10.3		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.11	764.8	53.0	11.7	94	Calm			0		10n			0	0	Covered	Francis Abbott, F.R.A.S
Leith, Restalrig Park			30.40	772.1	57.6	14.2		NW			1	8ck				0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.91	759.7	30.10	764.5	76.7	24.8	67	ENE	12.6	5.6		6	1	WNW	E	0.03	0.8	Fine	C. Meldrum.
Melbourne, Observatory	30.15	765.8	30.24	768.1	52.7	11.5	89	SSW	6	2.7			3			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.37	771.4	56	13.3		SW			3	3	0	SW		0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.18	766.6	51	10.6		W			6	7	7	W					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria, N. 48° 26′, W. 36° 22′			30.02	762.5	54	12.2	NNW		6		9		*25	NNW	D. clouds	Capt. W. Watson.
S. S. Batavia																Capt. J. E. Mouland.
Ship Camperdown																Capt. A. T. Miller.
Brig Catherine																Capt. Adam Smith.
Barque Celeste																Capt. D. F. McKechnie.
S. S. Hibernia																Capt. W. R. Cato.
Barque Maroon																Capt. A. T. Brown.
Ship Mikado																Capt. C. C. Prehn.
S. S. Seine, N. 51° 10′, W. 34° 52′			30.06	763.5	52	11.1	NNW		8		3		8	NNW	D. clouds	Capt. H. Manning.
Barque Sorata																Capt. Jas. J. Price.
Schooner Traveller, N. 41° 15′, W. 59° 0′			30.21	767.3	71	21.7	WSW		4		1		3	WNW	Blue sky	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.17	664.7			68.0	20.0	92	SW			1		10n						Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.05	763.3	30.10	764.5	55.0	12.8	85	WNW			4		6						
Fanöe	30.18	766.5	30.20	767.0	55.9	13.3	87	WNW			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.58	751.4	29.63	752.5	48.4	9.1	95	SW			4		8						
Thorshavn, (Faröe)	30.08	763.9	30.11	764.8	53.4	11.9	83	SW			7		5						
Vestervig	29.33	760.2	30.10	764.5	55.4	13.0	87	NW			6		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alengon, Normal School	29.84	758.0	30.39	772.0	56.3	13.5	65	NE			2		1		NE	0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.07	763.6	30.14	765.6	65.8	18.8	39	N			3		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.75	755.7	30.32	770.2	56.1	13 4	40	E			2		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	30.10	764.4	30.38	771 6	54.0	12.2	52	ESE			1		0			0	0	Clear	Normal School.
Besançon	29.38	746.3	30.30	769 6	52.0	11.1	59	E			8		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.41	747.0	30.34	770.6	51.8	11	63	N			2		0			0	0	Clear.	Normal School.
Bourges, Normal School	29.74	755.4	30.30	769.6	52.2	11.2	72	N			3					0	0		A. Wagner, Director.
Brest, Naval Observatory	30.01	762.2	30.23	767.7	66.7	19.3	56	ESE			3		1k		ESE	0	0		The Staff.
Carcassonne, Normal School	29.72	755.0	30.13	765.4	67.5	19.7	47	E			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	30.06	763.5	30.38	771.7	57.2	14.0	47	NE			2		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.86	733.1	30.22	767.6	54.7	12.6	59	NE			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.46	748.3	30.37	771.5	50.9	10.5	62	E			4		0			0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.03	737.3	30.17	766.3	64.9	18.3	39	NW			4		8		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.02	762.5	30.23	767.9	64.2	17.9	50	N			6		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.02	762.6	30.33	770.4	57.0	14.4	42	SSE			4		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.33	744.9	30.26	768.5	51.8	11	63	N			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.20	767.1	30.30	769.7	61.2	16.2	41	ESE			3		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.58	751.2	30.28	769.0	51.6	10.9	95	NE			4		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.21	741.8	30.27	768.8	50.7	10.4	46	NNE			4					0	0		Normal School.
Nismes, Normal School	29.77	756.1	29.97	761.2	65.1	18.4	45	N			8		0			0	0	Clear.	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	30.12	765.0	30.36	771.1	56.3	13.5	40	NE			1		0			0	0	Clear	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.17	766.3	30.20	767.1	62.2	16.8	35	E			5		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.27	768.8	30.35	771.0	61.3	16.3	45	NNE			1		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.07	738.3	30.18	765.3	64.4	18	44	E			2		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.5	29.81	757.2	80.6	27										0	0		L'Abbé Marchésl.
Marseilles, Observatory			30.11	764.7	67.5	19.7	55	WSW			1–2		3			0	0		The Staff.
Mont-Louis	24.95	633.6	30.26	768.6	50.2	10.1	51	NE	9 3	4.17			4		SSW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.07	763.8	30.35	770.8	56.5	13.6	40	NE			3		0			0	0		Marié Davy, Director.
Perpignan			30.16	766.0	60.3	15.7	57	E	7.4	3.33			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.30	541.0			40.6	4.8		NE			1		2					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.57	573.2			44.4	6.9		NE			1		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.19	766.8	30.35	771.0	57.6	14.2	45	NE			2		0			0	0	Clear	E. Renou.
Toulouse, Observatory	29.44	747.8	30.17	766.3	61.3	16.3	39	E			1		0			0	0		The Staff.
Tours	30.09	764.2	30.28	769.2	57.2	14.0	37	E			4		6			0	0	Clear	C. Marquet.
Versailles, (near Paris)			30.35	771.0	57.2	14.0	40	E			2		0			0	0	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.14	765.6	30.17	766.2	60.8	16.0	89	E	4.0	1.8			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude, the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.13	765.3	30.30	769.6	52.7	11.5	82	SW			2		10			0.022	0.56		Prof. Arndt.
Breslau	29.79	756.7	30.33	770.3	52.5	11.4	45	W			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.91	759.7	30.35	770.8	52.9	11.6	46	W			1		0			0	0		Albert Senz.
Cassel	29.81	757.2	30.43	772.9	56.5	13.6	63	NW			1		10			0	0	Foggy	Dr. H. Möhl.
Crefeld	30.20	767.0	30.36	771.2	59.0	15.0	54	S			2		1			0	0		Director Lose.
Emden	30.29	769.4	30.33	770.3	58.5	14.7	76	WNW			3		10			0	0		Prof. Prestel.
Frankfort on the Main	30.05	763.3	30.43	772.8	53.8	12.1	28	E			0		0			0	0		Physical Society.
Friedrichshafen	28.85	732.8	30.31	769.8	51.8	11.0	54	NE			6		0			0	0		M. Wilhelm.
Hamburg	30.22	767.6	30.29	769.4	55.4	13.0	85	NW			4		8k			0.067	1.7	Raining	Captain F. Hegemann.
Kiel	30.21	767.3	30.23	767.7	57.4	14.1	80	NW			1		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.96	761.0	30.03	762.7	49.1	9.5	93	SW											Prof. E. Luther.
Köslin			30.14	765.6	48.2	9.0		SW			4		5			0.012	0.3		H. Müller.
Leipsic, Observatory	29.96	761.0	30.39	771.9	51.4	10.8	61	W			3		8	WNW		0	0		Prof. Bruhns.
Memel, Naval School	29.97	761.1	30.01	762.3	53.2	11.8	72	WNW			5		8ks						Reinbrechtvon Skalweit.
Neufahrwasser	30.07	763.8	30.09	764.2	52.7	11.5	80	WSW			3		10	NW		0.047	1.2		A. Lothes.
Posen	29.98	761.5	30.27	768.8	50.4	10.2	66	W			6–7		10						Dr. Magener.
Strassburg Obs., (in Alsace)	29.79	756.7	30.35	770.9	53.1	11.7	44	NE			4		0			0	0		Dr. Schur.
Stuttgart	29.39	746.4	30.35	770.9	50 9	10.5	49	E			1		0			0	0		Prof. Schoder.
Treves, (Trier)	29.72	755.0	30.25	768.4	54.5	12.5	43	NE			2		4			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.81	731.8	30.34	770.6	49.6	9.8	46	ENE			2		1	NE		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.22	767.6	30.26	768.6	56.1	13.4	86	W			5		2						E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.71	754.6	30.10	764.5	68.4	20.2		NE			Strong							Covered	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29 72	754.9	29.77	756.2	82.9	28.3	81	WSW	31.07	13.87			1			0	0	D. clouds	
Deesa																			
Bombay	29.79	756.8	29.83	757.7	81.4	27.4	86	SSW	2.0	0.9			10		NNW	0.08	2.0	Overcast	
Poona	27.73	704.4	29.74	755.3	76.3	24.6	86	W					10		W	0.49	12.4	Thunder-storm	
Lahore	28.98	736.0	29.70	754.3	94.4	34.7	25	Calm	1.1	0.5			0			0	0	Blue sky	
Belgaum	27.31	693.6	29.84	757.9	76.9	24.9	79	W	4.0	1.8			6		W	0	0	D. clouds	
Bangalore																0	0		
Roorkee	28.80	731.4	29.66	753.4	95.9	35.5	27	Calm	2.4	1.1						0	0		
Agra	29.13	739.8	29.67	753.6	97.7	36.5	20	SE											
Trichinopoly																0	0	D. clouds	
Nagpur	28.71	729.2	29.73	755.2	89.5	31.9	53	S	2.0	0.9			5						
Madras																0	0	D. clouds	
Lucknow	29.31	744.5	29.67	753.6	96.1	35.6	29	WNW	0.9	0.4			1			0	0	Blue sky	
Allahabad	29.37	746.0	29.67	753.7	90.8	32.7	47	Calm	1.2	0.5			0			0	0	D. clouds	
Patna	29.55	750.6	29.73	755.1	89.4	31.9	63	Calm	0.7	0.3			5			0	0	Lightning	
Hazaribagh	27.77	705.4	29.76	755.9	83.0	28.3	68	Calm	5.4	2.4			2			0.87	22.1	D. clouds	
Cuttack	29.75	755.2	29.82	757.3	79.4	26.3	86	SSW	2.6	1.2			6			0	0	Overcast	
Calcutta (Alipore)	29.81	757.1	29.83	757.6	81.5	27.5	89	S	8.0	3.6			10			0.14	3.6		
Goalpara																0	0	Gloomy	
Chittagong	29.80	757.0	29.90	759.4	80.1	26.7	94	Calm	9.7	4.3			10			0.17	4.3	Raining	
Sibsagar	29.51	749.5	29.85	758.1	78.1	25.6	91	ESE	3.2	1.4			10						
Rangoon																0	0	D. clouds	
Jubbulpore	28.39	721.1	29.73	755.2	86.9	30.5	62	S	4.2	1.9			7	S					

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.29	566.1	30.09	764.3	32.4	0.2	60	NW			4		0			0	0		Ab. Dom. Morgini.
Stelvio	22.25	565.2	30.09	764.3	35.1	1.7		ENE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.82	757.5	30.23	767.9	57.0	13.9	33	SE	4.9	2.2			0			0	0		Prof. Giovanni Clodig.
Padua	30.11	764.9	30.23	767.7	58.1	14.5	32	ENE	13.0	5.8			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.03	762.8	30.23	767.7	58.3	14.6	37	E	3.1	1.4			0			0	0		Conte Alm. Da Schio.
Verona	30.03	762.8	30.25	768.4	67.3	19.6	38	NE			2		4	SW		0	0		Dott. B. Bertoncelli.
Bergamo	28.91	734.3	30.19	766.8	56.5	13.6	47	SW			2		0			0.039	1.0		Prof. Trionfini Carlo.
Domodossola	29.18	741.2	30.20	767.1	59.0	15.0	47	Calm			0		0			0	0		Prof. Giuseppe Calza.
Milan	29.72	754.9	30.24	768.0	58.8	14.9	49	E			2		1			0	0		Ab. Gio. Capelli.
Pavia	29.91	759.6	30.24	768.1	55.8	13.2	44	E			4		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.34	745.2	30.24	768.2	57.6	14.2	49	NNW	2.5	1.1			7	E		0	0		Prof. P. F. Denza.
Mondovi	29.49	749.1	30.21	767.4			47	NW			6		8	N		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.93	760.1	30.15	765.7	63.9	17.7	27	ENE			8		0			0	0		Prof. L. Vassallo.
Genoa	29.99	761.7	30.16	766.0	65.3	18.5	28	N	6.9	3.1			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.00	761.9	30.25	768.4	57.6	14.2	34	E	21.0	9.4			2			0	0		Dott. G. Manzi.
Parma	29.90	759.4	30.21	767.3	59.0	15.0	49	ESE			6		1			0	0		Prof. P. Pigorini.
Florence	29.91	759.6	30.16	766.1	59.0	15.0	46	N			6		2			0	0		Cav. F. Meucci.
Leghorn	29.97	761.3	30.06	763.4	51.8	11.0	81	ENE	16.8	7.5			0			0	0		Prof. P. Monte.
Siena	28.95	735.2	30.15	765.7	62.6	17.0	34	ENE	0.7	0.3			0			0	0		Prof. L. Toscani.
Urbino	28.62	727.0	30.17	766.3	51.1	10.6	54	NNE			4		7			0.268	6.8		Prof. P. Serpieri.
Pesaro	30.13	765.4	30.18	766.6	58.1	14.5	67	N	32.2	14.4			5	N		0	0		Prof. Luigi Guidi.
Ancona	30.13	762.8	30.14	765.5	59.7	15.4	49	NE			4		2			0	0		Prof. F. DeBosis.
Grosseto	29.96	760.9	30.07	763.7	62.2	16.8	33	NNE			6		2	SE		0	0		Avv. P. Ponticelli.
Rome	29.84	757.9	30.01	762.3	66.6	19.2	55	N	15.4	6.9			10			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.80	757.0	30.00	762.0	56.1	13.4	84	NNE			4		10	ENE		0.098	2.5		Prof. L. Palmieri.
Lecce	29.73	755.2	29.98	761.5	63.0	17.2	81	NE	9.4	4.2			10			0.972	24.7		Prof. C. De Giorgi.
Cosenza	29.15	740.4	30.02	762.5	61.7	16.5	95	SE	1.3	0.6			10			3.942	100.2		Prof. F. D. Conti.
Cagliari	29.67	753.7	29.86	758.4	62.1	16.7	100	NW			2		10	W		0.453	11.5		Prof. A. Pacinotti.
Riposto, (Sicily)	29.77	756.2	29.82	757.4	73.4	23.0	85	SSE			6		10	NE		1.004	25.5		Prof. F. Cafiero.
Palermo	29.67	753.6	29.92	759.9	72.5	22.5	86	N	12.5	5.6			10			0.008	0.2		Prof. G. Cacciatore.
Caltanissetta	27.80	707.5	29.72	755.0	74.7	23.7	72	E			6		7	W		0.110	2.8		Prof. A. Pagani.
Syracuse	29.71	754.5	29.78	756.4	79.3	26.3	82	ESE			4		10	NE		0.039	1.0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.43	747.6	29.99	761.7	58.1	14.5	52	NE	4.9	2.2			10	N		0.157	4.0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,14[illegible].3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.89	759.2	29.99	761.8	65.7	18.7	86	E	0.6	0.3		9c; fg.				0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.11	587.1	30.15	765.9	50.0	10.0	68	Calm	0	0		1c	1s			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.40	772.1	30.40	772.1	60.8	16.0		NNW			1					0	0		
Groningen	30.29	769.3	30.34	770.7	56.8	13.8		NW			1					0	0		
Helder	30.35	770.8	30.35	770.8	55.8	13.2		NW			1					0.102	2.6		
Utrecht	30.33	770.4	30.38	771.6	58.5	14.7	65	NNE			2		5			0	0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.11	764.9	30.17	766.3	50.7	10.4	100	NW	8.5	3.8			10			0.276	7.0	Raining	
Brönö	29.78	756.4	29.82	757.4	48.9	9.4	87	W	18	8			10			0	0		
Christiania	29.82	757.4	29.97	761.1	56.7	13.7	64	WSW	0	0			7			0	0		
Tromsö	29.42	747.2	29.46	748.3	38.5	3.6	90	SW	11	5			10			0.197	5.0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.81	757.1	30.00	761.9	68.4	20 2	76	N	10.5	4.7			1			0.512	13.0		Dr. J. A. Sampaio
Campo Major	28.98	736.0	29.98	761.5	71.1	21.7	70	NNE	1.3	0.6			6	WSW		0.343	8.7		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.1	30.09	764.3	75.2	24.0	55	S	3.8	1.7			2			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.64	752.9	30.00	761.9	66.9	19.4	84	S	6.3	2.8			10	SW		0.236	6.0		The Staff.
Ponta Delgada, (Azores)	29.89	759.3	29.97	761.1	73.0	22.8	73	WNW	6.3	2.8			6			0.256	6.5		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell: Height scale 0–9	Sea or swell: Direction from—		
S. S. India, N 37° 53′, W. 22° 40′				30.07	763.8	68.5	20.3	97	ESE			4		10	SW	S	4		Showery	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.78	756.5	30.21	767.4	47.1	8.4	67	WSW	18	8			10						Astronomical Obs.
Wilna	29.58	751.3	30.00	762.0	48.2	9.0	88	W	2	1			4						Astronomical Obs.
Dorpat	29.52	749.7	29.76	756.0	43.7	6.5	98	W	4	2			10					Raining	Physical Cabinet.
St. Petersburg	29.65	753.2	29.67	753.6	45.9	7.7	90	WSW	4	2			10						Central Physical Obs.
Kuopio	29.29	743.9	29.61	752.1	41.4	5.2	100	E	7	3			10					Raining	Ch. Forsten.
Kieff	29.45	748.0	30.10	764.4	46.6	8.1	59	WNW	9	4			10						Physical Cabinet.
Nikolaiev	30.18	766.6	30.25	768.4	52.9	11.6	48	NNW	9	4			7						Kurdakof.
Kertch	30.19	766.9	30.21	767.4	57.6	14.2	56	W	7	3			10						Lagorio.
Moscow	29.28	743.7	29.84	757.9	40.1	4.5	82	NE	11	5			9			Blank	Blank		Meteorological Obs.
Lugan	29.78	756.3	29.98	761.5	48.4	9.1	50	WNW	18	8			9						Meteorological Obs.
Archangel	29.59	751.6	29.61	752.1	37.8	3.2	90	W	18	8			9						Ogorodnikof.
Tiflis	28.47	723.0	29.84	758.0	67.5	19.7	49	NW.	45	20			10			Blank	Blank		Physical Observatory.
Astrakhan	29.94	760.4	29.85	758.3	53.2	11.8	83	NNW	7	3			10						Sebastianof.
Kasan	29.26	743 3	29.54	750.2	41.9	5.5	83	NNW	2	1			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	28.53	724.6	29.47	748.6	41.7	5.4	67	WSW	7	3			10						Meteorological Obs.
Nukuss	29.39	746.5	29.61	752.0	88.0	31.1	32	ESE	7	3			3						
Kasaly																			Bobrof.
Tashkend	28.34	719.7	29.99	761.8	69.1	20.6	82	Calm	0	0			0						Michelson.
Barnaul	29.33	744.9	29.83	757.6	68.2	20.1	53	Calm	0	0			4						Meteorological Obs.
Yeniseisk	29.88	758.9	30.02	762.6	44.1	6.7	87	Calm	0	0			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.87	758.8	30.02	762.4	67.3	19.6	58	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock	29.96	761.0	30.00	762.0	53.6	12.0	75	Calm	0	0			0						
Nikolaievsk, on the Amoor					46.8	8.2	79	Calm	0	0			10						

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.: Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Maurid, Royal Observatory	27.82	706.5			59.7	15.4	91	SE	12.7	5.67			10			0.008	0.2	Rainy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.83	757.6	29.91	759.6	78.5	25.8	88	Calm	0	0		10pc	0			0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.93	760.1	30.02	762.6	68.5	20.3	89	SSE	10.7	4.8			10		SW	0.157	4.0	Raining	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.86	758.5	83.5	28.6	84	SE	0	0		3s	2k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.60	751.8	29.64	752.8	39.2	4.0	97	SE			2		10			0	0		
Umea	29.61	752.2	29.67	753.5	54.3	12.4	65	N			2		9			0	0		
Hernosand	29.71	754.6	29.76	755.9	57.2	14.0	61	NW			4		5			0	0		
Stockholm	29.65	753.2	29.83	757.7	54.0	12.2	61	SSW			4		5			0	0		
Wisby	29.88	758.9	29.94	760.4	49.6	9.8	87	W			4		3			0	0		
Sub-Series.																			
Upsala	29.76	756.0	29.84	757.9	56.7	13.7	49	NNW	12.5	5.6			2	NW		0.001	0.02		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.81	731.7	30.24	768.0	52.9	11.6	56	N			1		0			0	0	Clear	The Observatory.
Zurich	28.65	727.6	30.30	769.5	50.9	10.5	59	NE			1		0			0	0	Clear.	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +5.0 mm; Thermometer, —4.7 cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.24	768.1	59.2	15.1	61	N	22	10.0			10		NNE	0.457	11.6		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.93	760.2	68.0	20.0		NE			3		10			Blank	Blank		B. Stefanidès.
Valona			30.11	764.8	63.5	17.5		NW			1		10			0.94	24.	Raining	A. Bertrand.
Varna			30.16	766.0	57.2	14.0		NE			2		5						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.91	759.8	90.7	32.6	64	SW			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.86	758.4	29.93	760.2	50.9	10.5	73	NW	8	3.6			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.25	768.3	49	9.4		NE	3	1.3		2c	0	N		0	0	Fair	W. R. Bigg.
*Chatham, N. B.			29.92	760.0	51	10.6	71	SW	14	6.3		5k	5ks	NW	NW	0.27	6.9	Fair	G. A. Blair.
Charlottetown, P. E. Island.			29.96	761.0	54	12.2	59	NW	15	6.7			8ks		NW	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.05	763.3	30.25	768.3	43.8	6.5	88	N			1	10cs	0			0.229	5.82	Fair	James Smith, M. A.
Dalhousie, N. B.	29.95	760.7	29.99	761.7	47	8.3	75	W			4					1.00	25.4	Clearing	H. A. Johnson.
Esquimault, B. C.	29.82	757.4	29.87	758.7	44.3	6.8	100	Calm	0	0		8ck	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.08	764.0	44	6.7	79	W	12	5.4		5k	5s	W	W	0.32	8.1	Cloudy	J. McWilliams.
Fredericton, N. B.	30.03	762.7	30.09	764.3	50.0	10.0	66	NW	14	6.3		c	10ks		NW	0.405	10.29	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.77	756.1	39	3.9	97	SW	12	5.4		0	2ks		SW	0.350	8.89	Fair	James Stewart.
Goderich, Ontario	29.31	744.5	30.09	764.3	60.1	15.6	84	SE			2	6k	4n	W		0.064	1.63	Cloudy	H. J. Strang, M. A
Granton, Ontario	29.02	737.1	30.10	764.5	58	14.4	88	E			2	0	0			0.24	6.1	Clear.	James Grant.
*Halifax, N. S.			29.95	760.7	59	15.0	76	NW	18	8.0		0	2ks		W	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.83	757.7	30.20	767.1	58.7	14.8	79	NE			3							Light rain	Geo. Dickson, M. A
Heart's Content, N. F.	29.81	757.2	29.93	760.2	55	12.8	94	SW			4		10n			0.30	9.9	Foggy	E. Weedon.
*Kingston, Ontario	29.80	759.2	30.26	768.6	50	10.0	67	NW	13	5.8		5c	0	Calm		0	0	Fair	S. Woods, M. A
*Montreal, Quebec	30.09	764.3	30.29	769.4	49	9.4	66	NE	2	0.9		8ck	2ks			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.22	767.6	48	8.9	81	E	12	5.4		2cs	2ks	W	W	0	0	Fair.	Rev. R. Mosley
Peterboro, Ontario	29.49	749.0	30.25	768.3	49.7	9.8	75	E			1	8ck	0			0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.44	747.8	30.13	765.3	57	13.9	87	N	12	5.4		5c	0	S		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.84	757.9	29.89	759.2	64.8	18.2		NW	20	8.9						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.46	748.3	30.10	764.5	59	15.0	86	E	8	3.6		5ck	0	W		0	0	Fair	M. Payne.
*Quebec, Quebec			30.21	767.3	50	10.0	72	W	5	2.2		0	0			0.28	7.1	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario			30.30	769.6	42	5.6	91	E	6	2.7		8cs	0	NW		0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.92	760.0	30.09	764.3	49	9.4	78	NW	18	5.8		7k	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.40	746.7	30.10	764.5	56	13.3	92	SE	6	2.7			10ks		S	0.02	0.5	Light rain	K. Stewart.
Stayner, Ontario			30.18	766.6	52	11.1	86	SE	8	3.6		10k	0	W		0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.84	732.5	30.11	764.8	55.3	12.9	97	SE	9	4.0		2cs	8s	W		0.446	11.34	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.80	756.9	29.83	757.7	61	16.1	72	W	13	5.8		0	8ks		W	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.84	757.9	30.22	767.6	54	12.2	71	NW	7	3.1			10n		W	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					58.0	14.4	97	S				Sm'e	Sm'e			0.40	10.2	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.98	761.5	30.20	767.1	56	13.3	62	NW	6	2.7		0	0			0	0	Clear	
Alpena, Michigan	29.40	746.7	30.03	762.7	60	15.6	88	E	6	2.7			10s		E	0.12	3.0	Cloudy	
Atlantic City, New Jersey	30.17	766.3	30.19	766.8	68	20.0	100	Calm	0	0			Fog			0	0	Foggy	
Augusta, Georgia	29.82	757.4	30.00	762.0	72	22.2	85	NE	6	2.7			10ks		NE	0	0	Cloudy	
Baltimore, Maryland	30.13	765.3	30.18	766.6	65	18.3	89	N	2	0.9			10s; fg		Calm	0	0	Foggy	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	68	20.0	10	Calm	0	0			Fog		Calm	0	0	Dense fog	
Bismarck, Dakota	28.16	715.3	29.80	756.9	53	11.7	35	W	5	2.2		0	1s		Calm	0	0	Clear	
Boise City, Idaho	27.16	689.8	29.76	755.9	46	7.8	68	Calm	0	0			10ks		W	0	0	Cloudy	
Boston, Massachusetts	30.04	763.0	30.19	766.8	65	18.3	58	NW	8	3.6		8cs	Sm'e	NW		0	0	Cloudy	
Brackettville, Texas	28.80	731.5	29.79	756.7	75	23.9	76	E	1	0.4		5ck	0	Calm		0	0	Fair	
Breckenridge, Minnesota	28.94	735.1	29.95	760.7	44	6.7	84	NW	6	2.7		0	5ks		W	0.15	3.8	Fair	
Brownsville, Texas	29.88	758.9	29.95	760.7	75	23.9	85	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.41	747.0	30.11	764.8	57	13.9	87	NE	14	6.3		5c	0	SW		0	0	Fair	
Burlington, Vermont	30.01	762.2	30.28	769.1	47	8.3	85	N	5	2.2		2c	0	NE		0	0	Fair	
Cairo, Illinois	29.56	750.8	29.94	760.5	66	18.9	90	E	3	1.3		8cs	0	Calm		0.23	5.8	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.79	680.4	30.28	769.1	50	10.0	44	Calm				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.01	762.2	30.02	762.5	76	24.4	76	E	16	7.2		2k	0	E		0.01	0.3	Fair	
Cape Henry, Virginia	30.07	763.8	30.09	764.3	73	22.8	85	E	14	6.3		5cs	0	SE		0	0	Fair	
Cape Lookout, N. Carolina	30.00	762.0	30.02	762.5	77	25.0	77	E	30	13.4		8k	0	E		0.28	7.1	Cloudy	
Cape May, New Jersey	30.15	765.8	30.18	766.6	72	22.2	90	SE	6	2.7		5c	0	W		0	0	Fair	
Charleston, South Carolina	29.87	758.7	29.92	760.0	75	23.9	90	NE	12	5.4		0	8s		NE	0	0	Fair	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	34	1.1	69	W	3	1.3		0	0			0	0	Clear	
Chicago, Illinois	29.26	743.2	29.92	760.0	67	19.4	90	Calm	0	0			10s		Calm	1.14	29.0	Cloudy	
Cincinnati, Ohio	29.31	744.5	29.93	760.2	65	18.3	78	SE	1	0.4		2cs	Fog	W	Calm	0	0	Foggy	
Cleveland, Ohio	29.36	745.7	30.06	763.5	64	17.8	73	SE	10	4.5		5cs	0	Calm		0.01	0.3	Fair	
Concho, Texas	28.04	712.2	29.68	753.9	68	20.0	84	SW	4	1.8		0				0	0	Clear	
Corsicana, Texas	29.47	748.5	29.92	760.0	69	20.6	90	S	4	1.8		0	0			0	0	Clear	
Davenport, Iowa	29.29	744.0	29.91	759.7	64	17.8	94	Calm	0	0		4c	Haze	Calm	Calm	0.53	13.5	Fair	
Denison, Texas	29.13	739.9	29.90	759.4	69	20.6	90	SW	6	2.7		0	0			0	0	Clear	
Denver, Colorado	24.83	630.7	30.05	763.3	45	7.2	39	NW	6	2.7		2c	0	Calm		0	0	Clear	
Detroit, Michigan	29.35	745.5	30.00	762.0	66	18.9	90	E	7	3.1		10cs	0	Calm		0.07	1.8	Cloudy	
Dodge City, Kansas	27.32	693.9	29.56	750.8	53	11.7	79	W	6	2.7		0	0			0	0	Clear	
Dubuque, Iowa	29.22	742.2	29.90	759.4	65	18.3	83	S	3	1.3			10s		Calm	0.06	1.5	Cloudy	
Duluth, Minnesota	29.15	740.4	29.81	757.2	54	12.2	93	N	4	1.8			10n		N	1.18	30.0	Heavy rain	
Eagle Pass, Texas	29.15	740.4	29.87	758.7	73	22.8	85	SE	2	0.9		1c	1s	SW	Calm	0	0	Fair	
Eastport, Maine	30.04	763.0	30.10	764.5	53	11.7	60	NW	10	4.5		2c	0	SW		0.24	6.1	Clear	
Erie, Pennsylvania	29.37	746.0	30.06	763.5	65	18.3	83	Calm	0	0		2c	Sm'e			0	0	Fair	
Escanaba, Michigan	29.30	744.2	29.94	760.5	59	15.0	94	S	14	6.3			10s		S	0.21	5.3	Cloudy	
Florence, Arizona	28.33	719.6	29.93	760.2	67	19.4	28	W				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.10	612.1	30.10	764.5	54	12.2	14	NW	1	0.4		0	0			0	0	Clear	
Fort Craig, New Mexico	25.56	649.2			43	6.1	36	NW	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.37	746.0	29.90	759.4	56	13.3	93	Calm	0	0		0	Fog			0.43	10.9	Clear	
Fort Griffin, Texas	28.65	727.7	29.89	759.2	64	17.8	83	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.71	729.2	29.80	756.9	59	15.0	87	Calm	0	0		0	0			0	0	Clear	
Fort Sully, Dakota	28.32	719.3	29.98	761.5	47	8.3	55	NW	3	1.3		10ck	0	Calm		0	0	Cloudy	
Galveston, Texas	29.92	760.0	29.96	761.0	74	23.3	90	NW	6	2.7		2cs	0	W		0	0	Fair	
Grand Haven, Michigan	29.32	744.7	29.95	760.7	63	17.2	85	E	6	2.7		1ck	5s	W	S	0	0	Fair	
Indianapolis, Indiana	29.20	741.7	29.95	760.7	66	18.9	84	SW	3	1.3			10s		SW	Inap.	Inap	Cloudy	
Indianola, Texas	29.96	761.0	29.99	761.7	77	25.0	86	Calm	0	0		8k	0	SE		0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	29.84	757.9	29.86	758.4	75	23.9	90	NW	8	3.6		0	8s		NW	0.36	9.1	Clearing	
Keokuk, Iowa	29.27	743.4	29.86	758.4	66	18.9	78	S	1	0.4		0	Fog		Calm	0.05	1.3	Foggy	
Key West, Florida	29.84	757.9	29.87	758.7	84.0	28.9	71	Calm	0	0		1k	1s	E	Calm	0	0	Fair	
Kittyhawk, North Carolina	30.08	764.0	30.11	764.8	73	22.8	100	NE	8	3.6		5c	Fog	Calm		0	0	Fair	
Knoxville, Tennessee	29.01	736.8	29.99	761.7	64	17.8	88	Calm	0	0			10ks		SW	Inap.	Inap.	Cloudy	
La Crosse, Wisconsin	29.16	740.7	29.87	758.7	64	17.8	89	S	7	3.1			Fog			0.44	11.2	Foggy	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	54	12.2	26	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					77	25.0	82	SE	2	0.9		10ck	0	Calm		0	0	Cloudy	
Leavenworth, Kansas	29.07	738.4	29.90	759.4	56	13.3	93	S	1	0.4			Fog			0	0	Foggy	
Los Angeles, California	29.51	749.5	29.84	757.9	58	14.4	44	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.43	747.5	29.97	761.2	67	19.4	90	E	2	0.9		5c	Fog	SW	E	0.47	11.9	Fair	
Lynchburg, Virginia	29.44	747.8	30.10	764.5	71	21.7	80	Calm	0	0			10s		Calm	0	0	Cloudy	
Maricopa Wells, Arizona					50	10.0	32	SE				0	0			0	0	Clear	
Marquette, Michigan	29.21	741.9	29.90	759.4	58	14.4	81	SE	12	5.4			10s		Calm	0	0	Threatening	
Mason, Texas	28.34	719.8	30.03	762.7	70	21.1	48	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.62	752.3	29.93	760.2	65	18.3	90	SE	4	1.8			8s		SE	0.93	23.6	Cloudy	
Milwaukee, Wisconsin	29.28	743.7	29.95	760.7	61	16.1	94	SE	7	3.1		5cs	Sm'e	E		0.01	0.3	Fair	
Mobile, Alabama	29.91	759.7	29.95	760.7	73	22.8	90	N	4	1.8		5k	1s	S	Calm	0	0	Fair	
Montgomery, Alabama	29.75	755.6	29.98	761.5	71.5	21.9	90	E	1	0.4			10s		E	0.17	4.3	Cloudy	
Morgantown, West Virginia	29.05	737.9	30.08	764.0	62	16.7	83	Calm	0	0		10c	Haze	SW		0	0	Cloudy	
Mt. Washington, N. H.	23.94	608.1	30.30	769.6	37	2.8	45	NW	42	18.8		5cs	2s	NW	NW	0	0	Fair	
Nashville, Tennessee	29.46	748.3	29.98	761.5	68	20.0	90	E	2	0.9			10s		S	Inap.	Inap.	Cloudy	
New Haven, Connecticut	30.04	763.0	30.16	766.1	69	20.6	79	Calm	0	0		0	Fog; hz		Calm	0	0	Fair	
New London, Connecticut	30.13	765.3	30.18	766.6	68	20.0	90	Calm	0	0		0	2s; fg		W; Calm	0	0	Fair	
New Orleans, Louisiana	29.87	758.7	29.93	760.2	75	23.9	81	Calm	0	0		1c	0	W		0	0	Clear	
Newport, Rhode Island	30.13	765.3	30.18	766.6	66	18.9	90	W	6	2.7		4k	0	SW		0	0	Fair	
New York, New York	30.01	762.2	30.19	766.8	63	17.2	94	SW	4	1.8			Fog			0	0	Foggy	
Norfolk, Virginia	30.06	763.5	30.12	765.0	72	22.2	95	E	4	1.8		1c	1ck; hz		Calm	Inap.	Inap.	Fair	
North Platte, Nebraska	27.09	688.1	29.64	752.8	49	9.4	43	N	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.90	759.4	29.94	760.5	46	7.8	92	S	3	1.3			10s		Calm	0.43	10.9	Cloudy	
Omaha, Nebraska	28.79	731.3	29.84	757.9	57	13.9	93	SW	1	0.4		0	Sm'e		Calm	0	0	Clear	
Oswego, New York	29.87	758.7	30.19	766.8	57	13.9	76	NE	7	3.1		1c	Haze	Calm		0	0	Fair	
Pembina, Dakota	29.02	737.1	29.86	758.4	37	2.8	80	S	8	3.6		0	2s		Calm	0.14	3.6	Clear	
Philadelphia, Pennsylvania	30.14	765.5	30.19	766.8	65	18.3	100	S	2	0.9			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					58	14.4	26	E				0	0			0	0	Clear	
Pike's Peak, Colorado	17.94	455.7	30.15	765.8	30	— 1.1	41	SW	18	8.0		0	0			0	0	Clear	
Pioche, Nevada	24.10	612.1	29.87	758.7	50	10.0	26	S	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.08	764.0	60	15.6	88	Calm	0	0			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.38	746.2	30.03	762.7	60	15.6	70	SE	5	2.2		2ck	8ks	NW	SE	0.10	5.1	Cloudy	
Portland, Maine	30.13	765.3	30.18	766.6	58	14.4	58	NW	12	5.4		5k	Haze	W		0	0	Fair	
Portland, Oregon	29.89	759.2	29.99	761.7	52	11.1	93	Calm	0	0			10n		Calm	0.32	8.1	Light rain	
Prescott, Arizona					44	6.7	36	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.86	758.4	29.88	758.9	79	26.1	82	NE	4	1.8		0	0			0	0	Clear	
Red Bluff, California	29.57	751.1	29.92	760.0	65	18.3	54	N	2	0.9		0	0			0	0	Clear	
Rochester, New York	29.55	750.6	30.16	766.1	57	13.9	87	E	8	3.6		2c	Haze	NW	Calm	0.42	10.7	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.05	763.3	58	14.4	78	SW	8	3.6		5cs	0	Calm		0	0	Fair	
Sacramento, California	29.80	756.9	29.89	759.2	60	15.6	55	NW	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.35	745.5	29.91	759.7	63	17.2	89	SE	4	1.8			Fog		Calm	0.93	23.6	Foggy	
St. Marks, Florida	29.91	759.7	29.92	760.0	72	22.2	95	NE	3	1.3		2cs	5s	Calm	NE	0.42	10.7	Fair	
St. Paul, Minnesota	29.00	736.6	29.80	756.9	61	16.1	77	NW	7	3.1		2c	5s	W	W	0.22	5.6	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.62	650.7	29.95	760.7	48	8.9	56	E	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.26	743.2	29.83	757.7	70	21.1	90	S	1	0.4		0	2ks		Calm	0	0	Clear	
San Diego, California	29.78	756.4	29.85	758.2	63	17.2	57	E	4	1.8		0	0			0	0	Clear.	
Sandusky, Ohio	29.36	745.7	30.02	762.5	69	20.6	70	S	10	4.5		9cs	Sm'e	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.17	766.3	30.19	766.8	66	18.9	100	SW	3	1.3			Fog		SW	0	0	Foggy	
San Francisco, California	29.87	758.7	29.93	760.2	57	13.9	76	SW	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.35	593.1	29.89	759.2	46	7.8	24	NE	12	5.4		0	Haze			0	0	Clear	
Savannah, Georgia	29.84	757.9	29.92	760.0	75	23.9	85	NE	10	4.5			10s		NE	0	0	Cloudy	
Shreveport, Louisiana	29.73	755.1	29.95	760.7	69	20.6	85	S	1	0.4		2c	0	W		0	0	Fair	
Smithville, North Carolina	29.98	761.5	30.01	762.2	76	24.4	86	NE	10	4.5			10s		E	0.06	1.5	Cloudy	
Springfield, Massachusetts	29.98	761.5	30.16	764.5	64	17.8	89	NE	3	1.3			Fog			0	0	Foggy	
Stanwix, Arizona					54	12.2	48	Calm				0	0			0	0	Clear	
Stockton, Texas					65	18.3	89	S	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass	30.14	765.5	30.20	767.1	62	16.7	83	N	12	5.4		1ck	0	NW		0	0	Clear	
Toledo, Ohio	29.34	745.2	29.99	761.7	65	18.3	83	Calm	0	0		0	5s		Calm	Inap.	Inap.	Fair	
Tucson, Arizona	27.60	701.0	30.15	765.8	63	17.2	61	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	29.86	758.4	29.89	759.2	74	23.3	95	NE	24	10.7		2k	Fog	NE	Calm	0	0	Fair	
Umatilla, Oregon	29.58	751.3			51	10.6	79	NW	4	1.8			10s		Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.73	755.1	29.98	761.5	68	20.0	94	SE	2	0.9		0	0			0	0	Clear	
Virginia City, Montana	24.23	615.4	29.71	754.6	34	1.1	90	Calm	0	0			10n		Calm	0.02	0.5	Light snow	
Visalia, California	29.55	750.6	29.92	760.0	55	12.8	68	SE	1	0.4		0	0			0	0	Clear.	
Washington, D. C.	30.06	763.5	30.17	766.3	64	17.8	100	NE	3	1.3			Fog			0	0	Foggy	
Wickenburg, Arizona					51	10.6	23	S				0	0			0	0	Clear	
Wilmington, N. Carolina	29.93	760.2	30.00	762.0	73	22.8	95	E	4	1.8			10n		SE	0.07	1.8	Light rain	
Winnemucca, Nevada	25.63	651.0	29.99	761.7	45	7.2	45	SW	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	30.14	765.5	30.20	767.1	68	20.0	90	W	6	2.7			10s			0	0	Cloudy	
Yankton, Dakota	28.64	727.4	29.91	759.7	53	11.7	73	N	20	8.9		8cs	0	NW		0	0	Cloudy	
Yuma, Arizona	29.72	754.9	29.88	758.9	59	15.0	36	Calm	0	0		0	0			0	0	Clear.	
SUB-SERIES.																			
York Factory, B. A.	29.65	753.1	29.70	754.4	41.0	5.0	96	SE	21	9.4		8k	0	SW		0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.84	757.9	29.86	758.4	81	27.2	78	SE	1.2	0.5		8c	0	Calm		0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.03	762.7	30.04	763.0	82	27.8	87	E	9	4.0		10c	8n	SE		0.12	3.0		James Gall.
Santiago de Cuba, W. I.	29.88	758.9	29.89	759.2	80	26.7	82	NW	3	1.3		0	1ks		S	0	0	Clear	T. W. Beattie.
Navassa, W. I.	29.80	756.9	29.88	758.9	84	28.9		E			5	c				0	0	Cloudy	F. M Everett.
St. Thomas, W. I.					85	29.4	72	SE				2c	5s	E		0	0		G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.78	756.4	29.80	756.9	83	28.3	83	E				5k	5ks		E				L. V. Bigard.
Bridgetown, Barbados, W. I	29.95	760.7	29.97	761.2	82	27.8	83	NE	2	0.9		5c	5s	Calm		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			29.90	759.4	84	28.9	75	E	3	1.3		5ck	1s			0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			66.5	19.2	86	Calm			0	6cs				0.49	12.4	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757 8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,279 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer: As reported.* Inches.	Barometer: As reported.* Millimeters.	Barometer: Attached Thermometer. Fahrenheit.	Barometer: Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.95	760.7	61	16.1	60	15.6	65	SW	6	2.7			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.08	764.0			75	23.9	86	NE	9	4.0			9			0.45	11.4			D. clouds	
Navy Yard, Portsmouth, N.H.	30.23	767.8	70	21.1	62	16.7	61	NW			1		0			0	0			Smoky	
Naval Hospital, Yokohama, Japan	29.89	759.2	70	21.1	67	19.4	82	Calm			0		7k;s		SW	0	0			Cloudy	
Adams, Montevideo, Uraguay	29.94	760.5	57	13.9	56	13.3	69	WNW			1		1		NW	0	0			Blue sky	
Alert, Hakodadi, Japan	30.01†	762.2†	60	15.6	60	15.6	76	NNW			3		1		NW					D. clouds	
Alliance, Constantinople, Turkey.	30.33	770.4	63	17.2	63	17.2	57	N&E			2–5		10		N&E					Raining	
Ashuelot, Che-foo, China	30.21	767.3	76	24.4	65	18.3	58	S			2		1		Calm			Long gentle	ESE	D. clouds	
Canonicus, New Orleans, La.	29.96	761.0	55	12.8	74	23.3	90	Var.			1		3							Fair	
Colorado, New York, N. Y.	30.26	768.6	71	21.7	68	20.0	84	SW	4	1.8			5		SW	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	30.34	770.6	62	16.7	61	16.1	71	NNE			3–4		10		NE			Smooth		Overcast	
Essex, Santa Cruz, Tenerife	30.00	762.0	79	26.1	82	27.8	75	E			4		3					Smooth	W	D. clouds	
Franklin, Norfolk, Va.	30.14	765.5	65	18.3	74	23.3	95	E	8	3.6			2		E	0	0			Clear	
Frolic,																					
Gettysburg, N. 39° 40′, E. 9° 50′	29.80‡	756.9‡			68	20.0	100	N			7		10		N			Heavy	NNW	Raining	
Kearsarge, Singapore, India	29.89	759.2			81	27.2	91	ESE			2		8			0.35	8.9	Smooth		Misty	
Lackawana, Port Townsend, W. T.																					
Marion, Smyrna, Turkey	30.08	764.0	77	25.0	77	25.0	57	WNW			2		6		Calm	0	0	Smooth		D. clouds	
Monocacy, Hakodadi, Japan	29.80	756.9	63	17.2	58	14.4	70	WNW			2		10		WNW	0	0	Smooth		Blue sky	
Monongahela, N. 38° 45′ 56″, W. 66° 43′	30.34	770.6	75	23.9	75	23.9	72	WSW			3		ck					Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.10	764.5			74	23.3	90	NNE	29	13.0			8		NE	0	0			D. clouds	
Omaha, S. 31° 55′, W. 77° 54′	29.98	761.5	61.5	16.4	61.5	16.4	86	SE	2	0.9			9		Calm	0	0	Light	SE	Cloudy	
Onward, Callao, Peru	30.02	762.5	70	21.1	67	19.4	89	SE			1		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.24	768.1	68	20.0	66	18.9	94	WSW			2		4		Calm					Foggy	
Palos, Ningpo, China	30.20	767.1	67	19.4	66	18.9	84	Calm			0		1		Calm					Clear	
Pensacola, Mare Island, Cal.	30.05	763.3			67	19.4	79	SW			0–1		0			0	0			Pleasant	
Plymouth, New York, N. Y.	30.40	772.1	74	23.3	66	18.9	89	NW			1		Fog							Foggy	
Ranger, Nagasaki, Japan	30.00	762.0			68	20.0	74	ENE			1		0					Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.86	758.4			75	23.9	90	E			1		2		E					Hazy	
Santee, Annapolis, Md.	30.25	768.3	71	21.7	70	21.1	90	N			1					0	0			Light fog	
St. Louis, League Island, Pa	30.10	764.5	67	19.4	68	20.0	95	NE	1	0.4			10			0	0			Dense fog	
Tennessee, Hakodadi, Japan	29.83	758.9	61	16.1	60	15.6	60	NW	8	3.6			1		S&E	0.001	0.03	Smooth		D. clouds	
Trenton, Marseilles, France	30.16	766.1	69	20.6	67	19.4	74	N	2	0.9			6		N	0	0			D. clouds	
Vandalia, Smyrna, Turkey	30.13	765.3	76	24.4	76	24.4	56	W			2		5		W					D. clouds	
Wabash, Boston, Mass.	30.22	767.6	66	18.9	63	17.2	67	NE	7	3.1			8		NE	0	0			D. clouds	
Wyoming, Washington, D. C.	30.38†	771.6†	67	19.4	67	19.4		N&E			1									Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 44° 44′, E. 165° 08′			30.02*	762.5*	52	11.1	86	S			3		10		S	Small	S	Overcast	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 27′, E. 139° 39′					70	21.1		NE			2		8		ENE			Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 43° 24′, W. 38° 47′			30.20	767.1	60.0	15.6	71	NNE			5		c		NE	Long	NE	D. clouds	Capt. A. Jaeger.
S. S. Ohio, N. 38° 29′, W. 73° 34′			30.24	768.1	74.0	23.3	93	SSW			1		c		SW	Long	SE	Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Delaware River.			30.23†	767.8†	72	22.2		ESE			8		8		SSE			Fine	Captain Sargent.
S. S. Ohio, N. 51° 02′, W. 32° 10′			29.79*	756.1*	54	12.2	93	NNW			8		10		NNW	Large	NNW	Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.90	759.4	76	24.4	86	NE	10	4.5		0	5d	NE				Clear	Capt. James Jorgenson.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 28, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.04	762.9	73.4	23.0	66	NW			1		4			0	0	Fair	Michel.
Algiers			30.05	763.2	73.8	23.2	66	SW			1		1			0.591	15.0	Clear	Peter.
La Calle			30.05	763.2	71.1	21.7	78	E			3		9			1.220	31.0	Hidden.	Fleury.
Tunis			30.04	762.9	87.8	31.0		NE			4		6			0.551	14.0	Fair	Jacques.
Sfax			30.05	763.2	86.0	30.0		SSE			2		6			0	0	Fair	Husson.
Saida			30.02	762.4	69.3	20.7		N			2		2			0	0	Clear	Millot.
Tebessa			29.97	761.2	72.5	22.5		N			2		5			Inap.	Inap.	Fair	Bourgeois.
Geriville			29.98	761.5	68.7	20.4	24	SE			2		4			0	0	Fair	Lemaillot.
Laghouat			30.02	762.4	78.8	26.0	36	Calm			0		4			Inap.	Inap.	Fair	François.
Biskra			30.07	763.6	90.3	32.4	51	NNW			2		6			0	0	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.74	755.3	30.29	769.3	57.2	14.0	41	NE			2		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.51	749.6	30.30	769.5	48.9	9.4	89	W					10			0.004	0.1		Dr. Wierzbiski.
Eperies	29.35	745.5	30.24	768.2	48.9	9.4	69	Calm			0		9s		Calm	0	0		Julius Mikolik.
Gratz	29.08	738.5	30.34	770.7	53.1	11.7	65	S			3		0			0	0		Andreas Rospini.
Hermannstadt	28.77	730.8	30.21	767.3	52.2	11.2	47	N			3		0			0	0		Prof. Reissenberger.
Kremsmünster	28.89	733.7	30.24	768.1	52.2	11.2	54	ENE			2		0			0	0		Prof. C. Wagner.
Lemberg	29.17	741.0	30.18	766.6	47.5	8.6	89	NW			3		8			0.126	3.2		Dr. T. Stanecki.
Pola	30.07	763.7	30.18	766.6	61.5	16.4	32	NE			3		0			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.97	761.2	30.25	768.4	54.0	12.2	50	N			1		0			0	0		Karl Stancel.
Trieste	30.13	765.3	30.23	767.9	59.7	15.4	57	ENE			3		0			0	0	Clear	P. Busin.
Vienna	29.60	751.7	30.29	769.4	59.5	15.3	63	N			1		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m, of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.79	731.2	30.30	769.6	55.6	13.1	51	ENE			3		0			0	0		
Brussels	30.11	764.9	30.32	770.0	56.5	13.6	72	NNW			4		5		E	0	0		Royal Observatory.
Furnes	30.29	769.3	30.31	769.9	63.7	17.6	59	E			2		9			0	0		
Maeseyck	30.21	767.2	30.34	770.5	58.6	14.8	97	WSW			2		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.15	765.8	30.24	768.1	55.2	12.9		S	6	2.7			9			0	0	Hazy	C. H. Thompson; W. Boswell.
Ardrossan	30.27	768.8	30.28	769.1	59	15.0		SSW			2		5					D. clouds	William McNeil.
Armagh, Observatory			30.31	769.9	57.6	14.2		SSW	2	0.9			9					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.32	770.1	61.2	16.2		SE	8	3.6			0					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.30	769.6	57.0	13.9		Calm			0		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.92	760.0	30.31	769.9	55.5	13.1		N			0		10			0	0	Foggy	J. McLandsborough.
Bridgetown, (Barbados)			29.95	760.7	84.8	29.3		N			2		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.33	770.4	58.0	14.4		E			1		7					D. clouds	H. Todd. [H.C.
Cardington																			John McLaren.
Chatham, School M. E	30.19	766.8	30.32	770.1	62.2	16.8		N			1		4					Fine	F. Magawran, Q. M. Sergt. R. E.
Dartmoor	28.76	730.5	30.23	767.8	57.3	14.1		NE			3		4					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.27	768.8	30.30	769.6	58	14.4		SSW			3		8					D. clouds	J. Mac Gowan.
Dover	30.29	769.4	30.32	770.1	57	13.9		ENE			2		2					¾ clouded	T. Costello.
Eccles, (near Manchester)			30.30	769.6	62.5	16.9		SW					6					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.03	762.7	30.26	768.6	57.9	14.4		E			4		5					Hazy	The Staff.
Fort Napier, (Natal)	27.53	699.2	29.74	755.4	62.9	17.2		E			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.95	760.7	86	30.0		W			1		4					D. clouds	
Galway, Queen's College			30.14	765.5	58	14.4		NW			1		6					D. clouds	S. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.96	761.0	29.99	761.7	75.6	24.2		E			2		2					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.08	764.0	30.29	769.4	55.2	12.9		SSW			3		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.34	770.6	30.35	770.9	57	13.9		ENE			2		0					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.15	765.8	30.32	770.1	58.5	14.7		ENE			1		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.99	761.7	30.21	767.3	62	16.7		NE			3		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.28	769.1	61	16.1		NE			4		3			0.5	13.	D. clouds	M. P. Moyle.
Holyhead	30.25	768.3	30.30	769.6	59	15.0		SW			1		0					Foggy	John Tilston.
Jersey	29.94	760.5	30.24	768.1	61.4	16.3		E			4		0					Blue sky	J. Fisher.
Kew, Observatory			30.33	770.4	56.1	13.4		ENE	5	2.2			10					Hazy	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			30.34	770.6	58.0	14.4		Calm			0		0					Blue sky	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.87	758.7	29.94	760.5	75.8	24.3		E			2		8					Raining	Corp'l. P. Bravis, A.H.C.
Nairn	30.13	765.3	30.22	767.6	58	14.4		Calm			0		2					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.95	760.7	88.2	31.2		N			1		6					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.15	765.8	30.34	770.6	65.7	18.7		SE			1		1k		SSE	0.002	0.05	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.79	756.7	30.31	769.9	61.4	16.3		ENE			1-2		0					Blue sky	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.21?	767.3?	58	14.4		SE			1		7					D cloud	F. Lucas
Plymouth	30.19	766.8	30.27	768.8	59.7	15.4		E			3		0					Blue sky	John Merrifield.
Roche's Point	30.24	768.1	30.28	769.1															W. Kennedy.
Saint Ann's Head	30.13	765.3	30.29	769.4	58	14.4		ESE			3		2					Hazy	John C. Walker.
Sandwick Manse, (Orkneys)			30.18	766.6	54.8	12.7		WSW	18	8.0			10					Overcast	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.06	763.5	58.0	14.4		NE			2		10			Blank	Blank	Misty	Sergt. W. H. Lyne.
Sheffield	30.08	764.0	30.32	770.1	60.0	15.6		S			1		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.26	768.6	30.30	769.6	64.6	18.1	59	Calm			0		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					54.1	12.3		NE			0							Misty	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lews C., (Hebr.)			30.18	766.6	55	12.8		W			3		10					Overcast	John Smith.
Stratfield Turgiss	30.14	765.5	30.34	770.6	58.6	14.8		E			1		10					Overcast	Rev. C. H. Griffith, F.M.S.
Thurso			30.15	765.8	58	14.4		WSW			2		8					Overcast	John Trotter.
Truro, Royal Institution			30.26	768.6	63	17.2		E			6		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.25	768.3	59.7	15.4		E	15	6.7			10					Misty	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					59	15.0		S			1		0						Henry Mercer.
Cape Good Hope, Obs'y	30.28	769.1	30.32	770.1	63.9	17.7	54	SSE	19	8.5		3	5						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.02	762.5	49.0	9.4	76	S			3		4k			0	0		Francis Abbott, F.R.A.S
Leith, Restalrig Park			30.30	769.6	56.2	13.4		W			2		10k			0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.91	759.7	30.10	764.5	76.7	24.8	67	ENE	15.0	6.7		7	4	W	E	0	0	Fair	C. Meldrum.
Melbourne, Observatory	29.99	761.7	30.08	764.0	59.0	15.0	66	NE			6		4			0	0	Sultry	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.24	768.1	56	13.3		WSW			4	5	3	SW		0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.06	763.5	51	10.6		W			6		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.															Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 46° 41′, W. 42° 16′			29.78	756.4	60	15.6		SW			3		10		7.5*	WSW	Raining	Capt. W. Watson.
S. S. Batavia																		Capt. J. E. Mouland.
Ship Camperdown																		Capt. A. T. Miller.
Brig Catherine																		Capt. Adam Smith.
Barque Celeste																		Capt. D. F. McKechnie.
S. S. Hibernia																		Capt. W. R. Cato.
Barque Maroon																		Capt. A. T. Brown.
Ship Mikado																		Capt. C. O. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 28′			30.03	762.7	54	12.2		SSE			2		8		1	N	D. clouds	Capt. H. Manning.
Barque Sorata																		Capt. Jas. J. Price.
Schooner Traveller, N. 42° 0′, W. 56° 30′			30.30	769.6	57	13.9		N			5		6		4	NW	D. clouds	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26 20	665.5			67.1	19.5	100	SW			2		9s			*0.3	*8.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation. *Rain-fall in two days.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.09	764.2	30.13	765.4	54.9	12.7	75	WNW			2		8						
Fanöe	30.21	767.3	30.23	767.8	53.6	12.0	84	W			4		8						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.71	754.7	29.76	755.8	44.1	6.7	94	W			8		10					Raining	
Thorshavn, (Faröe)	29.89	759.2	29.93	760.1	50.9	10.5	75	W			4		3						
Vestervig	29.93	760.3	30.10	764.6	55.0	12.8	85	W			6		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.74	755.4	30.29	769.4	57.2	14	46	NE			1		1		NE	0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.13	765.2	30.21	767.2	66.9	19.4	39	N			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.66	753.3	30.22	767.6	60.3	15.7	42	E			2		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	30.00	762.0	30.29	769.3	57.2	14	47	E			2		0			0	0	Clear	Normal School.
Besançon	29.32	744.7	30.24	768.0	55.8	13.2	57	E			6		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.39	746.5	30.31	769.9	57.7	14.3	57	NW			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.64	752.8	30.19	766.8	53.6	12	65	E			3					0	0		A. Wagner, Director.
Brest, Naval Observatory	29.87	758.7	30.09	764.2	62.8	17.1	49	ESE			4		0			0	0		The Staff.
Carcassonne, Normal School	29.73	755.1	30.15	765.7	66.6	19.2	54	E			2		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.95	760.7	30.26	768.7	64.2	17.9	41	E			3		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.78	730.9	30.11	764.8	62.8	17.1	35	NE			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.34	745.3	30.21	767.4	55.0	12.8	54	E			4		0			0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.09	738.8	30.23	767.8	65.5	18.6	41	NW			1		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.02	762.6	30.23	767.9	64.4	18	69	N			6		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.84	757.8	30.14	765.5	62.1	16.7	56	SSE			3		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.32	744.6	30.24	768.2	53.2	11.8	59	NW			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.09	764.2	30.19	766.8	61.2	16.2	40	NE			3		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.48	748.9	30.18	766.5	54.1	12.3	98	NE			4½		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.11	739.3	30.16	766.1	51.6	10.9	45	NNE			2					0	0		Normal School
Nismes, Normal School	29.78	756.3	29.98	761.4	64.0	17.8	42	N			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	30.00	762.1	30.24	768.2	60.4	15.8	36	NE			1		0			0	0	Clear	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.09	764.2	30.12	765.0	64.8	18.2	52	E			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.19	766.8	30.28	769.0	63.0	17.2	40	E			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	29.02	737.1	30.07	763.7	72.0	22.2	37	E			1		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			30.16	766.1	65.7	18.7	54	W			2		1			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.97	634.1	30.28	769.1	52.2	11.2	56	ESE	7.4	3.33			2		SE	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.96	760.9	30.23	767.9	61.0	16.1	38	ENE			3		0			0	0		Marié Davy, Director.
Perpignan			30.17	766.2	62.8	17.1	58	S	18.6	8.33			1		SE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.33	541.8			40.3	4.6		NW			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.59	573.9			47.3	8.5		NW			1		3			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.07	763.8	30.24	768.0	62.6	17.0	37	NE			2		0			0	0	Clear	E. Renou.
Toulouse, Observatory	29.41	747.0	30.13	765.4	66.6	19.2	42	SE			3		0			0	0		The Staff.
Tours	30.02	762.4	30.21	767.4	59.4	15.2		SE			3		0			0	0	Clear	C. Marquet.
Versailles, (near Paris)			30.23	767.0	61.2	16.2	38	E			3		0			0.005	0.12	Fine	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.08	764.0	30.11	764.7	60.8	16.0	91	SE	3.8	1.7			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.14	765.5	30.31	769.9	55.4	13.0	74	W			1		8			0	0		Prof. Arndt.
Breslau	29.78	756.3	30.31	769.9	52.0	11.1	77	WNW			4		10			0.034	0.86		Royal University Obs'y.
Carlsruhe	29 84	757.9	30.27	768.8	59.0	15.0	52	NE			4		0			0	0		Albert Senz.
Cassel	29.80	756.9	30.41	772.5	59.4	15.2	54	N			1		10			0	0	Foggy	Dr. H. Möhl.
Crefeld	30.15	765.8	30.32	770.0	58.1	14 5	54	SW			1		4k			0	0		Director Lose.
Emden	30.31	769.9	30.35	770.8	54.3	12.4	84	NW			0		10			0.008	0.2		Prof. Prestel.
Frankfort on the Main	29.97	761.3	30.34	770.6	58.3	14.6	38	ENE			1		1			0	0		Physical Society.
Friedrichshafen	28.79	731.3	30.24	768.2	50.7	10.4	69	SW			1		0			0	0		M. Wilhelm.
Hamburg	30.25	768.3	30.32	770.1	55.8	13.2	77	WNW			4		10ks	NW		0.004	0.1	Cloudy	Captain F. Hegemann.
Kiel	30.24	768.1	30.26	768.5	54.9	12.7	79	NW			3		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.02	762.5	30.09	764.3	57.4	14.1	77	NW											Prof. E. Luther.
Köslin			30.21	767.3	53.4	11.9		W			2		4			0	0		H. Müller.
Leipsic, Observatory	29.96	760.9	30.38	771.7	56.1	13.4	71	NW			3		8	WNW		0	0		Prof. Bruhns.
Memel, Naval School	30.03	762.7	30.08	763.9	54.5	12.5	81	NW			3		2c;cs	NNW					Reinbrechtvon Skalweit.
Neufahrwasser	30.13?	765.4?	30.13?	765.4?	58.8	14.9	71	NW			3		1			0	0		A. Lothes.
Posen	29.99	761.7	30.28	769.1	53.4	11.9	79	W			6-7		10						Dr. Magener.
Strassburg Obs., (in Alsace	29.71	754.7	30.26	768.7	58.1	14.5	44	NE			2		0			0	0		Dr. Schur.
Stuttgart	29.30	744.2	30.24	768.2	57.7	14.3	40	E			1		0			0	0		Prof. Schoder.
Treves, (Trier)	29.65	753.2	30.18	766.6	59.2	15.1	48	E			2		0			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.76	730.5	30.26	768.7	55.9	13.3	45	E			2		0			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.25	768.3	30.29	769.4	55.0	12.8	81	WNW			4		4						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.: Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.64	752.8	30.03	762.7	63.5	17.5		NE										Thunder-storm.	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.73	755.1	29.78	756.4	83.3	28.5	83	WSW	29.0?	13.0?			1			0	0		D. clouds
Deesa																			
Bombay	29.79	756.6	29.82	757.5	82.7	28.2	89	SSW	5.0	2.2			10		SW	0	0		Misty
Poona	27.79	705.8	29.80	756.9	74.7	23.7	82	SE					10			0.44	11.2		Thunder-storm.
Lahore	29.02	737.0	29.74	755.4	92.1	33.4	24	Calm	1.0	0.4			0			0	0		Blue sky
Belgaum	27.31	693.7	29.85	758.1	76.7	24.8	86	W	4.0	1.8			4	E		0	0		D. clouds
Bangalore																			
Roorkee	28.80	731.6	29.68	753.8	94.0	34.4	16	NW	2.8	1.2						0	0		
Agra	29.16	740.6	29.70	754.4	98.7	37.1	19	W								0	0		
Trichinopoly																			
Nagpur	28.77	730.7	29.80	756.8	85.6	29.8	65	SE	2.2	1.0			5			0	0		Gloomy
Madras																			
Lucknow	29.34	745.1	29.70	754.3	93.3	34.1	24	NW	1.0	0.4			2			0	0		D. clouds
Allahabad	29.40	746.9	29 71	754.6	89.2	31.8	44	Calm	1.7	0.8			0			0	0		Blue sky
Patna	29.56	750.9	29.74	755.4	89.7	32.1	69	Calm	0.7	0.3			4			0	0		D. clouds
Hazaribagh	27.79	706.0	29.78	756.4	83.8	28.8	69	WNW	6.4	2.9			2			0	0		Blue sky
Cuttack	29.78	756.4	29.86	758.5	84.9	29.4	75	SSW	4.9	2.2			8			0.04	1.0		D. clouds
Calcutta (Alipore)	29.83	757.6	29.85	758.2	81.8	27.7	87	SSW	5.0	2.2			1			0	0		Blue sky
Goalpara	29.42	747.2	29.81	757.1	78.8	26.0	84	SSW	1.9	0.8			5	SW	SW	0.02	0.5		D. clouds
Chittagong	29.86	758.4	29.95	760.8	81.4	27.4	87	Calm	5.7	2.6			8			0	0		
Sibsagar	29.49	749.0	29.82	757.5	81.0	27.2	78	WSW	3.9	1.7			10	W	W	0.08	2.0		Gloomy
Rangoon																			
Jubbulpore	28.44	722.4	29.80	756.8	84.9	29.4	69	S	2.6	1.2			5	S		0	0		D. clouds

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrument al error and temperature. Inches.	Barometer. Corrected for instrument al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.35	567.8	30.16	766.0	37.2	2.9	67	E			2		0			0	0		Ab. Dom. Morgini.
Stelvio	22.32	566.9	30.15	765.9	38.8	3.8		E			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.80	756.9	30.21	767.3	59.5	15.3	36	SW	1.3	0.6			0			0	0		Prof. Giovanni Clodig.
Padua	30.12	765.0	30.23	767.6	58.6	14.8	33	NNE	4.3	1.9			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.03	762.8	30.23	767.7	60.1	15.6	41	SE	1.3	0.6			0			0	0		Conte Alm. Da Schio.
Verona	30.00	761.9	30.22	767.5	70.5	21.4	34	S			4		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.91	734.4	30.19	766.9	57.9	14.4	49	SW			1		0			0	0		Prof. Trionfini Carlo.
Domodossola	29.19	741.5	30.21	767.4	59.5	15.3	45	S			4		0			0.004	0.1		Prof. Giuseppe Calza.
Milan	29.74	755.3	30.25	768.4	58.5	14.7	55	WSW			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.91	759.8	30.26	768.6	57.6	14.2	49	NW			2		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.35	745.4	30.25	768.4	58.6	14.8	44	NNW	3.8	1.7			1			0	0		Prof. P. F. Denza.
Mondovi	28.32	719.4	30.23	767.7	56.1	13.4	33	NW			8		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.96	761.0	30.18	766.6	67.8	19.6	26	E			8		0			0	0		Prof. L. Vassallo.
Genoa	30.02	762.6	30.19	766.9	65.5	18.6	26	N	9.8	4.4			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.01	762.2	30.26	768.7	77.2	25.1	35	N	2.5	1.1			0			0	0		Dott. G. Manzi.
Parma	29.92	760.0	30.23	767.9	61.0	16.1	46	SE			4		0			0	0		Prof. P. Pigorini.
Florence	29.95	760.7	30.21	767.2	61.2	16.2	40	N			4		0			0	0		Cav. F. Meucci.
Leghorn	30.03	762.7	30.11	764.8	64.2	17.9	43	ENE	11.9	5.3			0			0	0		Prof. P. Monte.
Siena	28.91	734.4	30.11	764.9	63.7	17.6	35	SE	0.7	0.3			1	SE		0	0		Prof. L. Toscani.
Urbino	28.64	727.5	30.19	766.8	51.8	11.0	51	NNE			6		2			0	0		Prof. P. Serpieri.
Pesaro	30.17	766.2	30.21	767.4	58.5	14.7	44	N	45.4	20.3			3	N		0	0		Prof. Luigi Guidi.
Ancona	30.08	764.1	30.19	766.8	62.2	16.8	40	N			4		2			0	0		Prof. F. DeBosis.
Grosseto	30.04	762.9	30.15	765.7	64.0	17.8	34	NNE			6		3	SE		0	0		Avv. P. Ponticelli.
Rome	29.88	758.9	30.05	763.3	68.7	20.4	35	N	6.3	2.8			4			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.87	758.7	30.07	763.7	68.0	20.0	38	ESE			2		3	SW		0	0		Prof. L. Palmieri.
Lecce	29.69	754.1	29.94	760.4	64.4	18.0	50	N	22.4	10.0			4	N		0.532	13.5		Prof. C. De Giorgi.
Cosenza	29.15	740.4	30.02	762.5	64.9	18.3	79	NE	0	0			10			0.417	10.6		Prof. F. D. Conti.
Cagliari	29.78	756.5	29.97	761.2	70.0	21.1	60	W			2		5	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.90	759.5	29.95	760.7	75.7	24.3	51	N			2		10	NW		0.646	16.4		Prof. F. Cafiero.
Palermo	29.71	754.7	29.96	761.0	70.7	21.5	53	NE	2.5	1.1			10			1.606	40.8		Prof. G. Cacciatore.
Caltanissetta	27.98	710.6	29.85	758.1	68.5	20.3	70	N			4		5			0	0		Prof. A. Pagani.
Syracuse	29.84	757.9	29.91	759.8	74.3	23.5	87	ESE			6		10	ENE		0.118	3.0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.53	750.1	30.00	764.2	64.2	17.9	41	ENE	4.3	1.9			2	NE		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.95	760.7	30.05	763.3	60	15.6	91	NW	2.4	1.1		2				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.14	587.7	30.19	766.7	53.6	12.0	70	Calm	0	0		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.35	771.0	30.35	771.0	62.6	17.0		SSE			1					0.016	0.4		
Groningen	30.28	769.2	30.34	770.6	54.9	12.7		N			1					0.008	0.2		
Helder	30.33	770.4	30.33	770.4	57.0	13.9		NE			1					0	0		
Utrecht	30.30	769.7	30.35	770.9	57.9	14.4	78	NW			2		8			0	0	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.09	764.2	30.14	765.6	54.0	12.2	89	SSW	10.1	4.5			10			0.217	5.5		
Brönö	29.43	747.4	29.47	748.4	48.9	9.4	95	W	45	20			10					Raining	
Christiania	29.77	756.2	29.92	759.9	57.9	14.4	57	SW	4	2			10			0	0		
Tromsö	29.05	737.8	29.09	738.9	40.3	4.6	87	SW	11	5			10			0.866	22.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.92	760.0	30.11	764.9	64.2	17.9	66	NW	8.7	3.9			6			0	0		Dr. J. A. Sampaio
Campo Major	29.02	737.0	30.02	762.6	69.8	21.0	61	SW	4.9	2.2			7	SSW		0.098	2.5		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.97	761.3	30.06	763.5	75.0	23.9	55	SW	8.7	3.9			3			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.67	753.6	30.02	762.6	70.0	21.1	56	SE	6.3	2.8			6	WSW		0.075	1.9		The Staff.
Ponta Delgada, (Azores)	30.01	762.2	30.08	764.0	69.1	20.6	54	N	5.6	2.5			5	ESE		0.024	0.6		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India, N 38° 04′, W. 18° 34′			30.00	761.9	67.6	19.8	95	ENE			2		10	E	E	3		Overcast	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.74	755.4	30.17	766.3	53.2	11.8	87	WNW	9	4			10						Astronomical Obs.
Wilna	29.56	750.9	29.98	761.5	54.5	12.5	75	NW	2	1			5						Astronomical Obs.
Dorpat	29.63	752.6	29.87	758.8	52.9	11.6	61	WNW	7	3			7						Physical Cabinet.
St. Petersburg	29.64	752.8	29.65	753.2	47.1	8.4	75	W	4	2			8						Central Physical Obs.
Kuopio	29.22	742.2	29.54	750.2	46.8	8.2	91	WSW	7	3			10					Raining	Ch. Forsten.
Kieff	29.29	743.9	29.93	760.3	43.7	6.5	96	WNW	7	3			10					Raining	Physical Cabinet.
Nikolaiev	30.08	763.9	30.15	765.7	54.7	12.6	46	SW	4	2			10						Kurdakof.
Kertch	30.14	765.6	30.16	766.1	58.6	14.8	55	N	4	2			7						Lagorio.
Moscow	29.24	742.8	29.70	756.7	46.8	8.2	78	S	7	3			10					Raining	Meteorological Obs.
Lugan	29.83	757.7	30.04	762.9	51.1	10.6	60	WSW	13	6			10						Meteorological Obs.
Archangel	29.51	749.5	29.53	750.0	38.8	3.8	64	SW	13	6			9						Ogorodnikof.
Tiflis	28.74	729.9	30.14	765.5	63.9	17.7	55	SE	13	6			7						Physical Observatory.
Astrakhan	30.28	769.2	30.20	767.1	51.3	10.7	44	Calm	0	0			8						Sebastianof.
Kasan	29.50	749.4	29.78	756.4	43.7	6.5	51	WNW	2	1			2						Physical Cabinet.
Orenburg	29.45	748.0	29.83	757.6	43.5	6.4	76	E	13	6			5						Tschernischef.
Ekaterinburg	28.63	727.3	29.58	751.4	41.7	5.4	53	W	7	3			8						Meteorological Obs.
Nukuss	29.90	759.5	30.13	765.3	62.6	17.0	72	N	0	0			8						
Kasaly																			Bobrof.
Tashkend	28.39	721.2	30.05	763.3	70.7	21.5	83	Calm	0	0			0						Michelson.
Barnaul	29.18	741.1	29.67	753.5	78.1	25.6	22	S	9	4			2						Meteorological Obs.
Yeniseisk	29.40	746.8	29.55	750.5	49.3	9.6	83	E	11	5			4						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.69	754.2	29.84	757.8	70.5	21.4	51	Calm	0	0			0						Physical Observatory
Nertchinsk																			Meteorological Obs.
Vladivostock	29.85	758.2	29.89	759.2	59.9	15.5	90	S	4	2			1n						
Nikolaievsk, on the Amoor					52.2	11.2	79	SE	11	5			3						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 404.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.84	707.0			68.7	20.4	65	S	8.9	4.00		0	7			0.539	13.7	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.85	758.1	29.93	760.2	77.9	25.5	82	E	11.6	5.2		10pc	0			0.071	1.8	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.96	760.9	30.05	763.3	71.1	21.7	70	WSW	7.0	3.1		0	2		W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.90	759.5	84.9	29.4	81	SE	1.3	0.60		1cs	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.34	745.3	29.35	745.4	48.6	9.2	81	SW			4		10			0	0		
Umea	29.48	748.7	29.53	750.0	54.7	12.6	66	NW			2		10			0.024	0.6		
Hernosand	29.64	752.9	29.69	754.2	57.0	13.9	56	W			6		10			0	0		
Stockholm	29.72	754.8	29.89	759.3	58.6	14.8	60	W			2		7			0	0		
Wisby	29.96	760.9	30.02	762.4	50.4	10.2	87	W			6		5			0	0		
Sub-Series.																			
Upsala	29.80	756.9	29.87	758.8	57.7	14.3	62	SW	11.0	4.9			6	NW		0	0		Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.82	732.0	30.25	768.4	52.2	11.2	60	N			1		1			0	0	Clear	The Observatory.
Zurich	28.60	726.3	30.24	768.1	51.8	11.0	72	W			1		0			0	0	Clear	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +5.4 mm; Thermometer, —4.9 cent.; Relative Humidity, —6 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.11	764.8	59.2	15.1	77	N	17	7.5			10		N	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.17	766.2	56.8	13.8		NW			3		10			Blank	Blank		B. Stefanidès.
Valona			29.99	761.8	64.0	17.8		SE			1		10			2.17	55.	Covered	A. Bertrand.
Varna			30.00	762.0	64.4	18.0		NE			3		2						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.82	757.4	29.93	760.2	86.0	30.0	79	NW			1		4c			0	0	D. clouds	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	30.23	767.8	30.30	769.6	43.8	6.6	83	Calm	0	0			3			0	0		Hon. J. Fergus o.
Brockville, Ontario			30.05	763.3	57	13.9		Calm	0	0		0	2s		NE	0	0	Fair	W. R. Bigg.
*Chatham, N. B.			30.31	769.9	41	5.0	95	W	1	0.4		8ck	0	W		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.34	770.6	51	10.6	77	W	10	4.5		2c	0	Calm		Inap.	Inap.	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.82	757.4	30.01	762.2	52.8	11.6	89	E			1	1ck	0	W		0.146	3.79	Fair	James Smith, M. A.
Dalhousie, N. B.	30.22	767.6	30.26	768.6	41.7	5.4	96	NW			1					0	0	Clearing	H. A. Johnson
Esquimault, B. C.																0.59	15.0		W. H. Bevis.
*Father Point, Quebec			30.21	767.3	44	6.7	86	NE	10	4.5		2ck	5s	NE	NE	0	0	Fair	J. McWilliams.
Fredericton, N. B.	30.29	769.1	30.35	770.9	44.3	6.8	84	SW	2	0.9		3ck	0			Inap.	Inap.	Fair	Prof. Harrison.
*Fort Garry, Manitoba			29.93	760.2	37	2.8	95	SW	10	4.5		0	2s		SW	0	0	Fair	James Stewart
Goderich, Ontario	29.32	744.7	30.10	764.5	64.5	18.1	89	N			3	4k	6n	W		0	0	Cloudy	H. J. Strang, M. A.
Granton, Ontario	29.00	736.6	30.08	764.0	61	16.1	94	SW			1	1c	0			0	0	Foggy	James Grant.
*Halifax, N. S.			30.33	770.4	51	10.6	77	W	2	0.9		2cs	0			0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.73	755.1	30.09	764.3	63.2	17.3	86	N			1					0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F.	30.01	762.2	30.04	763.0	44	6.7	68	NW			7	0	2ks		SW	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.74	755.4	30.09	764.3	65	18.3	92	S	14	6.3			10cs		S	Inap.	Inap.	Threatening	S. Woods, M. A.
*Montreal, Quebec	29.86	758.4	30.06	763.5	55	12.8	80	SE	6	2.7		2ck	Sm'e	SE		0	0	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.05	763.3	58	14.4	97	Calm	0	0		2ck	Fog	W		0.43	10.9	Foggy	Rev. R. Mosley
Peterboro, Ontario	29.32	744.7	30.06	763.5	57.7	14.3	87	NE			1		10			0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario	29.40	746.7	30.08	764.0	62	16.7	94	Calm	0	0		2ck	0	SW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	30.28	769.1	30.33	770.4	66.3	19.1		Calm	0	0						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.48	748.8	30.12	765.0	56	13.3	97	E	3	1.3		0	Haze			0	0	Clear	M. Payne.
*Quebec, Quebec			30.15	765.8	53	11.7	86	S	8	3.6		5k	2n	S	S	0	0	Fair	Capt. Ashe, R. N.
*Rockliffe, Ontario			30.04	763.0	49	9.4	93	E	3	1.3		5ck	2s	W	SE	0.30	7.6	Fair	W. H. McIntyre.
St. John, N. B.	30.20	767.1	30.36	771.1	45	7.2	84	Calm	0	0			3ks			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.39	746.5	30.07	763.8	62	16.7	93	Calm	0	0			10n			0.08	2.0	Cloudy	K. Stewart.
Stayner, Ontario			30.07	763.8	64	17.8	83	N	10	4.5		5k	0	W		0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.81	731.8	30.06	763.5	60.2	15.7	98	SW	7	3.1		2cs	3s	NW		0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	30.27	768.8	30.30	769.6	53	11.7	66	W	6	2.7		5ck	2ks	NW	W	Inap.	Inap.	Fair	T. C. Hill.
*Toronto, Ontario	29.70	754.4	30.08	764.0	59	15.0	85	NW	1	0.4		8ck	Haze	W	Calm	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					44.0	6.7	84	NW				10k	10s			0.07	1.8	Fair	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.94	760.5	30.17	766.3	62	16.7	94	S	4	1.8			10s		Calm	0.07	1.8	Cloudy	
Alpena, Michigan	29.47	748.5	30.12	765.0	54	12.2	93	NW	8	3.6		5c	0	W		0.20	5.1	Fair	
Atlantic City, New Jersey	30.16	766.1	30.18	766.6	70	21.1	100	E	10	4.5		8cs	0	W		0	0	Cloudy	
Augusta, Georgia	29.80	756.9	29.98	761.5	72	22.2	85	NW	5	2.2			8ks		NW	0.03	0.8	Cloudy	
Baltimore, Maryland	30.11	764.8	30.16	766.1	70	21.1	90	NE	5	2.2			10s		NE	Inap.	Inap.	Cloudy	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	69	20.6	95	E	13	5.8		10cs	0			0	0	Cloudy	
Bismarck, Dakota	28.13	714.5	29.79	756.7	48	8.9	42	NE	6	2.7			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.00	685.8	29.50	749.3	60	15.6	44	S	4	1.8			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	30.12	765.0	30.27	768.8	58	14.4	81	SE	6	2.7			10s		Calm	Inap.	Inap.	Cloudy	
Brackettville, Texas	28.87	733.3	29.86	758.4	74	23.3	76	Calm	0	0		2c	0		Calm	0	0	Fair	
Breckenridge, Minnesota	29.02	737.1	30.03	762.7	43	6.1	91	SE	9	4.0		10k	0	W		0	0	Cloudy	
Brownsville, Texas	29.93	760.2	30.00	762.0	68	20.0	94	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.36	745.7	30.04	763.0	68	20.0	84	S	4	1.8		5ck	1s	W	W	0	0	Fair	
Burlington, Vermont	29.88	758.9	30.13	765.3	64	17.8	73	S	8	3.6			10s		S	0	0	Cloudy	
Cairo, Illinois	29.73	755.1	30.12	765.0	67	19.4	84	N	4	1.8		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.80	680.7	30.29	769.4	50	10.0	38	W				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.83	757.7	29.84	757.9	75	23.9	90	SE	33	14.8			10n		SE	2.07	52.6	Light rain	
Cape Henry, Virginia	30.01	762.2	30.04	763.0	72	22.2	100	E	22	9.8			10n		SE	0.43	10.9	Light rain	
Cape Lookout, N. Carolina	29.73	755.1	29.74	755.4	79	26.1	95	SE	46	20.6			10n		SE	5.12	130.8	Light rain	
Cape May, New Jersey	30.12	765.0	30.15	765.8	71	21.7	95	E	12	5.4			10s		E	0	0	Cloudy	
Charleston, South Carolina	29.83	757.7	29.89	759.2	73	22.8	85	N	9	4.0		0	8s		N	0.03	0.8	Fair	
Cheyenne, Wyoming	24.09	611.9	30.03	762.7	44	6.7	30	NW	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.42	747.3	30.09	764.3	65	18.3	89	N	7	3.1		10k	0	N		0	0	Cloudy	
Cincinnati, Ohio	29.41	747.0	30.04	763.0	65	18.3	83	SE	2	0.9			Fog		SE	0	0	Foggy	
Cleveland, Ohio	29.41	747.0	30.12	765.0	65	18.3	83	SE	3	1.3		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	27.89	708.4	29.73	755.1	67	19.4	68	SW	6	2.7		0				0	0	Clear	
Corsicana, Texas	29.54	750.3	29.99	761.7	67	19.4	84	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.48	748.8	30.11	764.8	63	17.2	88	NE	1	0.4			10s		Calm	0	0	Cloudy	
Denison, Texas	29.25	742.9	30.03	762.7	67	19.4	83	E	3	1.3		0	0			0	0	Clear	
Denver, Colorado	24.84	630.9	30.06	763.5	47	8.3	34	S	8	3.6		0	0			0	0	Clear	
Detroit, Michigan	29.40	746.7	30.05	763.3	63	17.2	94	SW	3	1.3		2cs	Fog	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.41	696.2	29.64	752.8	62	16.7	88	S	12	5.4		0	0			0	0	Clear	
Dubuque, Iowa	29.44	747.8	30.13	765.3	60	15.6	88	NE	2	0.9		5k	0	NE		0	0	Fair	
Duluth, Minnesota	29.44	747.8	30.13	765.3	46	7.8	76	NW	2	0.9			10s		NW	0.21	5.3	Cloudy	
Eagle Pass, Texas	29.22	742.2	29.94	760.5	70	21.1	75	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	30.25	768.3	30.31	769.9	52	11.1	97	NE	1	0.4		5c	0	Calm		0	0	Fair	
Erie, Pennsylvania	29.37	746.0	30.06	763.5	68	20.0	84	S	8	3.6		2c	Haze			0	0	Fair	
Escanaba, Michigan	29.51	749.5	30.17	766.3	48	8.9	78	Calm	0	0		5c	0	Calm		0.26	6.6	Fair	
Florence, Arizona	28.31	719.1	29.91	759.7	75	23.9	21	S				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.14	613.1	30.14	765.5	56	13.3	10	NE	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.60	650.2			45	7.2	53	NW	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.52	749.8	30.04	763.0	63	17.2	83	Calm	0	0		0	0			0	0	Clear	
Fort Griffin, Texas	28.75	730.2	30.00	762.0	62	16.7	83	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.81	731.8	29.88	758.9	69	20.6	79	NE	3	1.3		0	0			0	0	Clear	
Fort Sully, Dakota	28.25	717.5	29.89	759.2	52	11.1	66	SE	2	0.9		0	0			0	0	Clear	
Galveston, Texas	29.96	761.0	30.00	762.0	74	23.3	95	NW	8	3.6		0	0			0	0	Clear	
Grand Haven, Michigan	29.47	748.5	30.11	764.8	62	16.7	94	NE	6	2.7			10s		NW	0.10	2.5	Cloudy	
Indianapolis, Indiana	29.33	745.0	30.09	764.3	65	18.3	89	Calm	0	0		0	Sm'e			0	0	Clear	
Indianola, Texas	29.99	761.7	30.02	762.5	73	22.8	85	SW	2	0.9		2k	0	Calm		0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.87	758.7	29.89	759.2	74	23.3	85	Calm	0	0		8k	0	NE		0.04	1.0	Cloudy	
Keokuk, Iowa	29.46	748.3	30.06	763.5	67	19.4	79	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Key West, Florida	29.90	759.4	29.93	760.2	80.0	26.7	86	SE	26	11.6			10n		SE	0.09	2.3	Heavy rain	
Kittyhawk, North Carolina	29.95	760.7	29.97	761.2	70	21.1	100	NE	22	9.8			10n		NE	1.81	46.0	Heavy rain	
Knoxville, Tennessee	29.07	738.4	30.05	763.3	64	17.8	94	NE	1	0.4		5ck	0	NE		0.24	6.1	Cloudy	
La Crosse, Wisconsin	29.41	747.0	30.15	765.8	53	11.7	79	N	3	1.3		5c	0	Calm		0.05	1.3	Fair	
La Mesilla, New Mexico	26.11	663.2	30.26	768.6	54	12.2	21	NW				5k	0	Calm		0	0	Fair	
Laredo, Texas					75	23.9	76	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.23	742.4	30.06	763.5	60	15.6	88	Calm	6	0			Fog			0	0	Foggy	
Los Angeles, California	29.50	749.3	29.83	757.7	62	16.7	29	N	5	2.2		0	0			0	0	Clear	
Louisville, Kentucky	29.44	747.8	30.09	764.3	64	17.8	94	N	6	2.7		0	Fog		N	0	0	Clear	
Lynchburg, Virginia	29.39	746.5	30.05	763.3	71	21.7	85	NE	6	2.7			10s		N	Inap.	Inap.	Threatening	
Maricopa Wells, Arizona					58	14.4	30	S				2ck	1s	SW	S	0	0	Fair	
Marquette, Michigan	29.41	747.0	30.12	765.0	48	8.9	71	W	8	3.6		0	0			0	0	Clear	
Mason, Texas	28.40	721.3	30.10	764.5	69	20.6	70	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.78	756.4	30.09	764.3	67	19.4	90	NE	2	0.9		0	Fog		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.48	748.8	30.16	766.1	57	13.9	68	N	14	6.3		5c	Sm'e	NW		0	0	Fair	
Mobile, Alabama	29.96	761.0	30.00	762.0	69	20.6	100	N	9	4.0			10s		Calm	0	0	Threatening	
Montgomery, Alabama	29.79	756.7	30.02	762.5	70.5	21.4	95	NE	4	1.8		5cs	2s	E	E	0.74	18.8	Fair	
Morgantown, West Virginia	29.08	738.6	30.11	764.8	64	17.8	83	Calm	0	0		10c	Haze	W		0	0	Cloudy	
Mt. Washington, N. H.	24.04	610.6	30.40	772.1	46	7.8	100	W	27	12.1			Fog		W	0	0	Foggy	
Nashville, Tennessee	29.57	751.1	30.09	764.3	64	17.8	89	Calm	0	0		0	Haze		Calm	0.08	2.0	Clear	
New Haven, Connecticut	30.11	764.8	30.23	767.8	65	18.3	89	E	10	4.5			10s; fg		Calm	0.02	0.5	Cloudy	
New London, Connecticut	30.20	767.1	30.25	768.3	63	17.2	100	E	9	4.0			10n		Calm	Inap.	Inap.	Light rain	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	76	24.4	76	N	5	2.2		1ck	0	W		0	0	Clear	
Newport, Rhode Island	30.20	767.1	30.25	768.3	63	17.2	94	E	8	3.6			Fog			0	0	Foggy	
New York, New York	30.05	763.3	30.22	767.6	67	19.4	100	E	10	4.5			Fog			0	0	Foggy	
Norfolk, Virginia	30.00	762.0	30.05	763.3	70	21.1	100	SE	9	4.0			10n		E	0.65	16.5	Light rain	
North Platte, Nebraska	27.09	688.1	29.65	753.1	48	8.9	92	NE	5	2.2			Fog		Calm	0	0	Foggy	
Olympia, Washington Ter.	29.50	751.8	29.64	752.8	50	10.0	86	S	4	1.8		0	1s		W	2.09	53.1	Clear	
Omaha, Nebraska	28.94	735.1	30.01	762.2	56	13.3	87	N	2	0.9		2c	0	Calm		0	0	Clear	
Oswego, New York	29.77	756.1	30.08	764.0	65	18.3	86	SE	6	2.7		5ck	0	W		0	0	Fair	
Pembina, Dakota	29.12	739.6	29.97	761.2	34	1.1	90	SE	8	3.6		5k	0	Calm		0	0	Clear	
Philadelphia, Pennsylvania	30.15	765.8	30.20	767.1	68	20.0	95	NE	6	2.7			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					64	17.8	25	SE				0	0			0	0	Clear	
Pike's Peak, Colorado	17.91	454.9	30.12	765.0	33	0.6	61	SW	26	11.6		0	Haze			0	0	Clear	
Pioche, Nevada	24.11	612.4	29.88	758.9	53	11.7	19	SW	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.30	744.2	30.09	764.3	64	17.8	89	NW	2	0.9			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.41	747.0	30.06	763.5	62	16.7	88	W	5	2.2		2cs	Fog	Calm	Calm	0	0	Fair	
Portland, Maine	30.23	767.8	30.28	769.1	58	14.4	81	Calm	0	0		10k	Haze	W		0	0	Cloudy	
Portland, Oregon	29.69	754.1	29.79	756.7	56	13.3	81	NW	15	6.7		0	2ks		NW	0.60	15.2	Clear	
Prescott, Arizona					43	6.1	36	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	78	25.6	77	NE	6	2.7		5cs	0	Calm		0	0	Fair	
Red Bluff, California	29.49	749.0	29.84	757.9	62	16.7	41	NW	5	2.2		0	0			0	0	Clear	
Rochester, New York	29.45	748.0	30.04	763.0	67	19.4	84	SW	10	4.5		8k	0	SW		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.26	743.2	29.80	756.9	65	18.3	58	S	8	3.6			10n		SW	Inap.	Inap.	Light rain	
Sacramento, California	29.75	755.6	29.83	757.7	60	15.6	65	SE	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.54	750.3	30.10	764.5	65	18.3	84	N	4	1.8		0	0			0	0	Clear	
St. Marks, Florida	29.96	761.0	29.98	761.5	72	22.2	95	N	1	0.4		0	0			0	0	Clear	
St. Paul, Minnesota	29.29	744.0	30.12	765.0	49	9.4	87	E	3	1.3			10s		W	0.14	3.6	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.62	650.7	29.95	760.7	60	15.6	19	NW	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.32	744.7	29.88	758.9	71	21.7	84	Calm	0	0		0	2ks		S	0	0	Fair	
San Diego, California	29.78	756.4	29.84	757.9	63	17.2	57	N	1	0.4		0	0			0	0	Clear	
Sandusky, Ohio	29.44	747.8	30.10	764.5	68	20.0	74	SW	6	2.7		1c	Sm'e	Calm	Calm	0	0	Smoky	
Sandy Hook, New Jersey	30.20	767.1	30.22	767.6	68	20.0	100	E	7	3.1			Fog		Calm	0	0	Dense fog	
San Francisco, California	29.82	757.4	29.88	758.9	55	12.8	87	SW	12	5.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	53	11.7	16	E	7	3.1		0	Haze			0	0	Hazy	
Savannah, Georgia	29.87	758.7	29.96	761.0	73	22.8	85	N	4	1.8		0	2s		N	0.63	16.0	Fair	
Shreveport, Louisiana	29.82	757.4	30.03	762.7	72	22.2	80	N	3	1.3		0	0			0	0	Clear	
Smithville, North Carolina	29.68	753.9	29.72	754.9	70	21.1	95	NW	10	4.5			10s		Calm	3.38	85.9	Cloudy	
Springfield, Massachusetts	30.04	763.0	30.16	766.1	63	17.2	88	Calm	0	0			10s		Calm	0	0	Cloudy	
Stanwix, Arizona					64	17.8	33	NE				0	2ks		Calm	0	0	Fair	
Stockton, Texas					62	16.7	71	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.22	767.6	30.27	768.8	60	15.6	82	SE	4	1.8		8cs	2s	Calm	SW	0	0	Cloudy	
Toledo, Ohio	29.42	747.3	30.08	764.0	68	20.0	84	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Tucson, Arizona	27.37	695.2	29.92	760.0	68	20.0	60	S				2c	0	S		0	0	Fair	
Tybee Island, Georgia	29.91	759.7	29.94	760.5	72	22.2	90	NW	6	2.7		0	8s		NW	0.30	7.6	Clearing	
Umatilla, Oregon	29.35	745.5			56	13.3	73	Calm	0	0		0	2s		Calm	0.17	4.3	Clear	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	66	18.9	90	N	6	2.7		0	0			0	0	Clear	
Virginia City, Montana	24.12	612.6	29.60	751.8	45	7.2	68	Calm	0	0			10s		Calm	0.01	0.3	Cloudy	
Visalia, California	29.50	749.3	29.87	758.7	57	13.9	57	SE	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.04	763.0	30.16	766.1	69	20.6	95	NE	5	2.2			10s		NE	Inap.	Inap.	Cloudy	
Wickenburg, Arizona					56	13.3	14	W				0	0			0	0	Clear	
Wilmington, N. Carolina	29.61	752.1	29.69	754.1	70	21.1	100	NE	10	4.5			10n		NE	4.92	125.0	Heavy rain	
Winnemucca, Nevada	25.58	649.7	29.94	760.5	47	8.3	41	SW	6	2.7		0	0			0	0	Clear	
Wood's Holl, Mass	30.22	767.6	30.28	769.1	64	17.8	88	E	5	2.2			10s			0	0	Threatening	
Yankton, Dakota	28.79	731.3	30.10	764.5	43	6.1	83	NE	2	0.9		2c	0	NW		0	0	Fair	
Yuma, Arizona	29.70	754.4	29.87	758.7	60	15.6	35	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.34	745.2	29.39	746.5	40.5	4.7	96	SW	19	8.5		0	0			0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.86	758.4	29.88	758.9	78	25.6	86	SE	3.6	1.6		8c	0	Calm		0.05	1.3	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	84	28.9	83	SE	14	6.3		10c	2s	SE		0	0		James Gall.
Santiago de Cuba, W. I.	29.94	760.5	29.94	760.5	83	28.3	74	Calm	0	0		c	ks			0	0	Fine	T. W. Beattie.
Navassa, W. I.	29.86	758.4	29.94	760.5	83	28.3		E			4					0	0	Cloudy	F. M Everett.
St. Thomas, W. I.					85	29.4	76	SE				2c	5s	E		0	0		G. O. Gellich
Pt-a-Pitre, G'd'loupe, W. I.	29.85	758.2	29.87	758.7	83	28.3	83	SE				2k	5ks		SE			Hazy	L. V. Bigard.
Bridgetown, Barbados, W. I	30.03	762.7	30.05	763.3	84	28.9	79	S	4	1.8		5k	5ks	SE		0	0	Fair	E. Racker.
Paramaribo, D. Guiana, S. A.			30.00	762.0	85	29.4	73	E			3	4c	0	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			68.5	20.3	80	Calm			0	1k	2ks			0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.: Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.: Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.89	759.2	60	15.6	58	14.4	82	SW	16	7.2			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.08	764.0			72	22.2	85	N	10	4.5			4			0	0			Foggy	
Navy Yard, Portsmouth, N.H	30.29	769.4	66	18 9	57	13.9	81	ENE			1		10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.92	760.0	67	19.4	61.5	16.4	94	NW			3		2c;fog		W	Light	Light			Fair	
Adams, Montevideo, Uraguay																					
Alert, Hakodadi, Japan	30.07†	763.8†	64	17.8	62	16.7	83	Calm			0		0							Blue sky	
Alliance, Constantinople, Turkey.	30.30	769.6	64	17.8	60	15.6	82	N&E			2		10		N&E					Rainy	
Ashuelot, Che-foo, China	30.10	764.5	80	26.7	72	22.2	71	S			0–1		0					Smooth		D. clouds	
Canonicus, New Orleans, La	30.02	762.5	56	13 3	75	23.9	86	NNE			1		4							Fair	
Colorado, New York, N. Y	30.31	769.9	71	21.7	68	20.0	95	SE	6	2.7			10		SE	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	30.25	768.3	83	28.3	60	15.6	88	NNE			3–5		10		NE			Smooth		Rainy	
Essex, Santa Cruz, Tenerife	30.01	762.2	78	25.6	81	27.2	78	E			2		5					Smooth	N	D. clouds	
Franklin, Norfolk, Va	30.10	764.5	71	21.7	71	21.7	100	ENE	4	1.8			6		ENE	0.5	13.			Raining	
Frolic, N. 9° 08′, W. 54° 05′	30.10	764.5	85	29.4	85	29.4	96	SE			2		3k		Calm	0	0	Smooth		D. clouds	
Gettysburg, N. 39° 00′, E. 10° 50′	29.93‡	760.2‡			71	21.7	100	N			6		7		N	Blank	Blank	Moderate.	N	D. clouds	
Kearsarge, Singapore, India	29.89	759.2			83	28.3	100	ENE			2		4			0	0	Smooth		Misty	
Lackawana, Nanaimo, B. C	29.50	749.3			48	8.9	78	SW			4		7		W			Moderate.	W	D. clouds	
Marion, Smyrna, Turkey	29.99	761.7	72	22.2	71	21.7	62	WNW			2		10		Calm			Smooth		Light rain	
Monocacy, Hakodadi, Japan	29.90	759.4	54	12.2	54	12.2	100	NNW			1		1		N&W	0	0	Smooth		D. clouds	
Monongahela, N. 39° 10′ 48″, W. 67° 17′.	30.35	770.9	75	23.9	75	23.9	72	SE			0–1		cs					Smooth		D. clouds	
New Hampshire, Port Royal, S. C	30.10	764.5			72	22.2	90	NNW	13	5.8			3		N	0.7	18.			D. clouds	
Omaha, S. 31 °50′, W. 76° 34′	29.81	757.2	63	17.2	63	17.2	83	NNE	4	1.8			8		N&E	0	0	Light	N&E	Cloudy	
Onward, Callao, Peru	30.03	762.7	71	21.7	68	20.0	90	SE			3		10					Long	W	D. clouds	
Ossipee, New York, N. Y	30.24	768.1	72	22.2	69	20.6	95	SE			3		10							Foggy	
Palos, Tinghae, Chusan Island, China.	30.18	766.6	71	21.7	66	18.9	84	N			1									Clear	
Pensacola, Mare Island, Cal	30.00	762.0			62	16.7	83	SW			3		0			0	0			Pleasant	
Plymouth, New York, N. Y	30.43	772.9	70	21.1	70	21.1	95	WSW			2		Fog							Foggy	
Ranger, Nagasaki, Japan	30.10	764.5			70	21.1	70	Calm			0		0					Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.94	760.5			69	20.6	95	E			1		1		Calm					D. clouds	
Santee, Annapolis, Md	30.24	768.1	71	21.7	70	21.1	95	NE			1		10		E	0.10	2.5			Cloudy	
St. Louis, League Island, Pa	30.12	765.0	71	21.7	68	20.0	90	NE	1	0.4			10		NE	0	0			Foggy	
Tennessee, Hakodadi, Japan	29.88	758.9	79	26.1	59	15.0	70	NW	2	0.9			1			0	0	Light	N&W	D. clouds	
Trenton, Marseilles, France	30.24	768.1	68	20.0	66	18.9	79	W	5	2.2			0			0	0			Blue sky	
Vandalia, Smyrna, Turkey	30.00	762.0	72	22.2	71	21.7	66	S			1		10							D. clouds	
Wabash, Boston, Mass	30.32	770.1	60	15.6	60	15.6	71	SE	7	3.1			10		Calm	0	0			D. clouds	
Wyoming, Washington, D. C	30.32†	770.1†	70	21.7	71	21.7		N&E			1		10							Fog & mist	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 43° 38′, E. 160° 00′			29.87*	758.7*	60	15.6	82	W			5		8		W	Rough chop.	W	D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, Yokohama, Japan.					67	19.4		E			4		5		SE			Cloudy	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 45° 17′, W. 32° 20′			30.23	767.8	60.0	15.6	71	N			4		8		NNE	Long	NNE	Blue sky	Capt. A. Jaeger.
S. S. Ohio, Chesapeake Bay.			30.16	766.1	71.5	21.9	95	ENE			3		10					Damp	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 51° 39′, W. 17° 30′			30.02*	762.5*	64	17.8	94	E			4		5		E	Moderate.	WSW	D. clouds	Captain Shackelford.
S. S. Indiana, N. 39° 28′, W. 72° 22′			30.24†	768.1†	77	25.0		SE			7		7		S	Heavy	SE	Fine	Captain Sargent.
S. S. Ohio, N. 52° 20′, W. 26° 20′			30.00*	762.0*	61	16.1	94	ESE			3				SE	Small	SE	Cloudy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.87	758.7	75	23.9	81	NNW	8	3.6		0	0					Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 29, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.06	763.4	74.1	23.4	76	NW			1		4			0	0	Fair	Michel.
Algiers			30.02	762.5	73.8	23.2	65	NE			3		6			0	0	Fair	Peter.
La Calle			30.08	764.0	74.5	23.6	78	NE			3		4			0	0	Fair	Fleury.
Tunis			30.09	764.2	73.4	23.0		NE			4		7			0.236	6.0	Cloudy	Jacques.
Sfax			30.09	764.2	82.4	28.0		ENE			4		7			Inap.	Inap.	Cloudy	Husson.
Saida			30.02	762.6	76.6	24.8		N			2		2			0.047	1.2	Clear	Millot.
Tebessa			29.97	761.3	74.8	23.8		NE			2		2			0	0	Clear	Bourgeois.
Geriville			29.99	761.8	67.3	19.6	65	NE			3		4			0.630	16.0	Fair	Lemaillot.
Laghouat			30.04	762.9	66.2	19.0	90	E			2		9			0	0	Hidden	François.
Biskra			30.08	764.1	86.9	30.5	36	NNW			2		8			Inap	Inap.	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann. Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.67	753.7	30.22	767.6	59.5	15.3	48	SE			2		1			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.49	749.1	30.26	768.7	55.8	13.2	80	W					10			0	0		Dr. Wierzbiski.
Eperies	29.35	745.4	30.23	767.7	57.7	14.3	57	S			2		3os		E	0	0		Julius Mikolik.
Gratz	28.99	736.3	30.24	768.2	56.1	13.4	70	S			2		0			0	0		Andreas Rospini.
Hermannstadt	28.83	732.2	30.24	768.1	58.3	14.6	47	E			1		0			0	0		Prof. Reissenberger.
Kremsmünster	28.81	731.8	30.16	766.0	54.0	12.2	70	E			1		0			0	0		Prof. C. Wagner.
Lemberg	29.21	741.8	30.20	767.1	51.3	10.7	77	NW			3		10			0.106	2.7		Dr. T. Stanecki.
Pola	30.05	763.3	30.17	766.2	66.2	19.0	33	ESE			2		0			0	0		I.R.HydrographicOffic e
Szathmar																			Johann Tamas, S. J.
Szegedin	29.96	761.0	30.24	768.1	60.8	16.0	49	SE			1		0			0	0		Karl Stancel.
Trieste	30.07	763.7	30.17	766.3	64.8	18.2	37	ENE			2		0			0	0	Clear	P. Busin.
Vienna	29.52	749.9	30.22	767.5	61.5	16.4	71	SE			1		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.70	729.0	30.20	767.1	58.8	14.9	50	E			3		0			0	0		Royal Observatory.
Brussels	30.01	762.3	30.21	767.4	57.4	14.1	69	NNE			4		0			0	0	Clear	
Furnes	30.18	766.6	30.21	767.2	63.9	17.7	63	E			2		3			0	0	Foggy	
Maeseyck	30.11	764.9	30.24	768.2	58.8	14.9	66	ENE			2		0			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	30.21	767.3	30.31	769.9	52.0	11.1		S	6	2.7			10			0.020	0.51	Drizzling	C. H. Thompson; W. Boswell.
Ardrossan	30.24	768.1	30.26	768.6	58	14 4		NNW			1		7					D. clouds	William McNeil.
Armagh, Observatory			30.25	768.3	55.9	13.3		SE	6	2.7			10					Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.23	767.8	59.0	15.0		ESE	6	2.7			0					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.20	767.1	59.9	15.5		ESE			1		8					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.88	758.9	30.27	768.8	55.1	12.8		E			0		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)			29.95	760.7	84.0	28.9		SE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.23	767.8	62.0	16.7		E			1		5					D. clouds	H. Todd. [H.C.
Cardington			30.24	768.1	59.0	15.0		E			1		5					D. clouds	John McLaren.
Chatham, School M. E.	30.08	764.0	30.21	767.3	61.2	16.2		NE			3		2					Hazy	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.70	729.0	30.17	766.3	54.6	12.6		E			4		7					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.20	767·1	30.24	768.1	57	13.9		ESE			2		5					D. clouds	J. Mac Gowan.
Dover	30.19	766.8	30.21	767.3	59	15.0		NE			3		0					Clear	J. Costello.
Eccles, (near Manchester)			30.22	767.6	57.5	14.2		SW	0.8	0.4			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.90	759.4	30.13	765.3	60.8	16.0		E			4		5					Foggy	The Staff.
Fort Napier, (Natal)	27.92	709.2	30.13	765.3	63.3	17.4		S			3		5					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.94	760.5	82	27.8		N			0		5					Raining	
Galway, Queen's College			30.15	765.8	58	14.4		NW			1		2					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.96	761.0	30.00	762.0	74.0	23.3		E			3		7					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	30.08	763.5	30.26	768.6	56.7	13.7		SSE			2		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.25	768.3	30.26	768.6	58	14.4		E			2		0					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.04	763.0	30.21	767.3	62.4	16.9		ESE			2		1					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.89	759.2	30.11	764.8	62	16.7		ESE			1		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.16	766.1	62	16.7		E			4		2			0	0	D. clouds	M. P. Moyle.
Holyhead	30.15	765.8	30.20	767.1	58	14.4		ENE			3		1					D. clouds	John Tilston.
Jersey	29.85	758.2	30.14	765.5	63.0	17.2		ESE			2		0					Blue sky	J. Fisher.
Kew, Observatory			30.21	767.3	59.0	15.0		E	15	6.7			5k					Hazy	The Staff.
Kingstown																			George Mitchell.
Leicester, Museum			30.25	768.3	55.5	13.1		SE			1		7					Hazy	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.97	761.2	30.04	763.0	75.8	24.3		NE			2		6					D. clouds	Corp'l. P. Bravis, A.H.C.
Nairn	30.20	767.1	30.29	769.4	54	12.2		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			29.94	760.5	83.8	28.8		NE			1		10			Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	30.07	763.8	30.26	768.6	61.4	16.3		SSW			3		3k		SE	0.001	0.03	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.70	754.4	30.22	767.6	56.8	13.8		ENE			2		3					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.22	767.6	57	13.9		ENE			2		4					D. clouds	F. Lucas
Plymouth	30.07	763.8	30.15	765.8	60.2	15.7		ESE			3		5					D. clouds	John Merrifield.
Roche's Point	30.13	765.3	30.17	766.3															W. Kennedy.
Saint Ann's Head	30.01	762.2	30.18	766.6	58	14.4		ESE			2		2					Hazy	John C. Walker.
Sandwick Manse, (Orkneys)			30.32	770.1	51.9	11.1		NW	10	4.5			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.22	767.6	64.6	18.1		NE			2		7					D. clouds	Sergt. W. H. Lyne.
Sheffield	30.02	762.5	30.26	768.6	58.0	14.4		NE			1		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.23	767.8	30.26	768.6	58.7	14.8	62	W			2		10			0	0	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					56.0	13.3		NE			1							Misty	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lewis C., (Hebr.)			30.27	768.8	54	12.2		ESE			1		10					Gloomy	John Smith.
Stratfield Turgiss	30.02	762.5	30.24	768.1	55.6	13.1		E			1		0?					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.28	769.1	58	14.4		NNW			1		3					Blue sky	John Trotter.
Truro, Royal Institution			30.17	766.3	64	17.8		SE			6		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.12	765.0	60.5	15.8		ESE	19	8.5			6					Misty	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)					56	13.3		E			1		10						Henry Mercer.
Cape Good Hope, Obs'y	30.22	767.6	30.26	768.6	72.0	22.2	44	SSE	17	7.6		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.84	757.9	53.0	11.7	88	S			2		4kn			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.30	769.6	58.0	14.4		E			1	2ck				0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.93	760.2	30.12	765.0	75.8	24.3	65	E	19.2	8.6		3	3	E	E	0.03	0.8	Fair	C. Meldrum.
Melbourne, Observatory	29.90	759.4	30.00	762.0	52.6	11.4	83	S	4	1.8			8			0.12	3.0	Drizzling	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.27	768.8	56	13.3		Calm			0	5	3	SE		0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.23	767.8	51	10.6		N			3	3	5	NE					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria, N. 44° 57′, W. 46° 38′			30.05	763.3	52	11.1		W			2		9			*17.5	NNW	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 51° 18′, W. 17° 5′			30.04	763.0	60	15.6		SSW			4		9			3	ESE	D. clouds	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 30′, W. 34° 19′			29.45	748.0	55	12.8		SSW			6		6			4	SW	Squally	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 42° 15′, W. 54° 35′			30.15	765.8	63	17.2		WSW			3		6			4	N	D. clouds	Capt. Alex Simpson

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.19	665.2			68.4	20.2	95	E			2		9pks			0.3	8.	Storm	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.01	762.2	30.06	763.4	57.0	13.9	75	WNW			6		2						
Fanöe	30.14	765.5	30.16	766.0	57.6	14.2	80	WNW			4		8						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.15	765.7	30.19	766.8	44.1	6.7	98	Calm			0		8						
Thorshavn, (Faröe)	30.28	769.0	30.31	769.9	48.6	9.2	68	E			2		0						
Vestervig	29.93	760.2	30.10	764.5	53.8	12.1	80	WNW			6		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.66	753.4	30.21	767.4	57.2	14	79	NE			1		1		NE	0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.14	765.6	30.22	767.6	68.7	20.4	45	N			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.60	751.8	30.16	766.0	63.1	17.3	52	S			1		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais	29.89	759.3	30.18	766.6	58.1	14.5	60	E			1		0			0	0	Clear	Normal School.
Besançon	29.32	744.6	30.22	767.6	57.2	14	67	SW			2		0			6	0	Clear	Normal School.
Bourg-en-Bresse	29.38	746.2	30.30	769.5	65.3	18.5	56	SW			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.60	751.9	30.15	765.7	63.5	17.5	71	NE			2					0	0		A. Wagner, Director.
Brest, Naval Observatory	29.79	756.6	30.01	762.2	70.0	21.1	57	E			1		1		Calm	0	0		The Staff.
Carcassonne, Normal School	29.68	753.8	30.09	764.3	66.4	19.1	46	E			4		0			0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.89	759.1	30.20	767.1	64.4	18.0	53	SE			2		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.78	731.0	30.10	764.4	69.6	20.9	21	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.30	744.2	30.19	766.9	57.2	14	47	E			2		0			0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.10	739.1	30.24	768.1	70.0	21.1	36	NW			2		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.95	760.6	30.12	765.0	62.4	16.9	33	SE			1		5		SE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.84	757.9	30.15	765.7	62.4	16.9	53	SSE			2		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.30	744.1	30.22	767.6	59.4	15.2	69	NW			2		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.00	762.0	30.10	764.5	68.7	20.4	41	ESE			3		2		E	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.50	749.2	30.19	766.8	57.4	14.1	89	NE			4		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.68	738.7	30.14	765.5	52.3	11.3	64	NNE			1					0	0		Normal School
Nismes, Normal School	29.77	756.2	29.97	761.3	66.6	19.2	39	S			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.93	760.3	30.17	766.4	59.7	15.4	59	SSE			1		0			0	0	Clear	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.08	763.9	30.11	764.7	70.5	21.4	46	SE			2		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.06	763.4	30.14	765.6	64.4	18.0	51	E			1		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	29.05	737.9	30.10	764.4	73.4	23	40	W			2		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.1	29.84	757.8	81.3	27.4										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.19	766.8	67.5	19.7	51	N			1		0			0	0	Clear	The Staff.
Mont-Louis	24.99	634.8	30.31	769.8	53.2	11.8	46	SE	7.4	3.33			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.89	759.1	30.16	766.1	61.3	16.3	55	NE			1		0			0	0		Marié Davy, Director.
Perpignan			30.18	766.6	63.1	17.3	63	S	14.9	6.66			0			0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P.	21.38	543.1			41.4	5.2		SE			2		6					Fair	M. Baylac.
Pic du Midi, (Summit,) H. P.	22.63	574.8			46.4	8.0		SE			2		7			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.00	762.0	30.17	766.2	63.0	17.2	53	E			1		0			0	0	Clear	E. Renou.
Toulouse, Observatory	29.41	747.1	30.14	765.5	67.6	19.8	38	SE			4		0			0	0		The Staff.
Tours	29.93	760.2	30.13	765.2	62.2	16.8		SSE			1		0			0	0	Clear.	C. Marquet.
Versailles, (near Paris)			30.17	766.2	62.2	16.8	47	SE			1		0			0	0	Very clear.	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.99	761.7	30.01	762.3	64.6	18.1	96	SE	4.3	1.9			1k			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,201.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.09	764.3	30.26	768.6	57.2	14.0	67	S			1		10			0	0		Prof. Arndt.
Breslau	29.75	755.7	30.29	769.3	53.8	12.1	60	W			3		10			0	0		Royal University Obs'y.
Carlsruhe	29.76	755.8	30.18	766.6	60.8	16.0	54	N			1		0			0	0		Albert Senz.
Cassel	29.72	754.8	30.33	770.4	61.2	16.2	67	NE			1		10			0	0	Foggy	Dr. H. Möhl.
Crefeld	30.07	763.6	30.23	767.7	60.8	16.0	62	E			2		9			0	0		Director Lose.
Emden	30.24	768.2	30.28	769.0	56.7	13.7	70	NW			3		1			0	0		Prof. Prestel.
Frankfort on the Main	29.89	759.2	30.26	768.5	61.0	16.1	42	ENE			1		1			0	0		Physical Society.
Friedrichshafen	28.78	731.0	30.23	767.9	51.4	10.8	83	SW			2		0			0	0	Foggy	M. Wilhelm.
Hamburg	30.17	766.4	30.24	768.2	57.7	14.3	73	WSW			4		10			0	0		Captain F. Hegemann.
Kiel	30.17	766.2	30.18	766.6	55.6	13.1	84	W			4		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.88	758.9	29.95	760.7	53.6	12.0	76	W											Prof. E. Luther.
Köslin			30.13	765.4	53.4	11.9		SW			4		4			0.083	2.1		H. Müller.
Leipsic, Observatory	29.89	759.2	30.32	770.0	54.9	12.7	62	S			1		9	WSW		0	0		Prof. Bruhns.
Memel, Naval School	29.85	758.2	29.90	759.4	54.1	12.3	77	WNW			7-8		10s						Reinbrechtvon Skalweit.
Neufahrwasser	30.02	762.6	30.04	763.0	57.0	13.9	59	WNW			5		10			0	0	Squally	A. Lothes.
Posen	29.95	760.7	30.24	768.1	55.8	13.2	61	W			5		10						Dr. Magener.
Strassburg Obs., (in Alsace	29.66	753.4	30.21	767.4	55.9	13.3	62	E			2		0			0	0		Dr. Schur.
Stuttgart	29.25	743.0	30.19	766.8	60.4	15.8	58	NE			1		0			0	0		Prof. Schoder.
Treves, (Trier)	29.55	750.6	30.08	763.9	62.6	17.0	54	E			4		0			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.68	728.5	30.21	767.2	59.0	15.0	50	ENE			1		0			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.21	767.3	30.25	768.3	54.7	12.6	87	WNW			4		10						E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.79	756.7	30.18	766.5	67.1	19.5		NE										Cloudy	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29 74	755.4	29.79	756.8	85.8	29.9	74	WSW	19.0?	8.5?			0			0	0	Blue sky	
Deesa																			
Bombay	29.78	756.4	29.82	757.3	85.7	29.8	82	NW	13.0	5.8			10	WNW	W	0	0	Overcast	
Poona	27.82	706.7	29.83	757.6	77.2	25.1	84	S					10		S	0.33	8.4	Thunder-storm	
Lahore	29.00	736.5	29.72	755.0	89.1	31.7	39	Calm	1.2	0.5			0			0	0	Blue sky	
Belgaum	27.34	694.4	29.89	759.1	74.4	23.6	89	Calm	0	0			9		E	0.37	9.4	Raining	
Bangalore																			
Roorkee	28.83	732.2	29.70	754.5	89.8	32.1	23	NW	3.0	1.3						0	0		
Agra	29.15	740.3	29.69	754.1	97.7	36.5	18	W								0	0		
Trichinopoly																			
Nagpur	28.82	732.0	29.87	758.6	78.1	25.6	74	E	2.1	0.9			9			0	0	Thunder; lightn'g	
Madras																0	0	Blue sky	
Lucknow	29.35	745.4	29.71	754.6	93.1	33.9	23	WNW	1.1	0.5						0	0	Blue sky	
Allahabad	29.43	747.4	29.73	755.2	86.4	30.2	42	Calm	2.0	0.9			0			0	0	D. clouds	
Patna	29.55	750.6	29.73	755.1	91.3	32.9	43	W	1.6	0.7			4	W	W	0	0	Lightning	
Hazaribagh	27.81	706.3	29.80	757.0	82.6	28.1	70	WSW	8.8	3.9			3			0	0	D. clouds	
Cuttack	29.80	756.9	29.88	759.0	84.2	29.0	75	SSW	4.2	1.9			4			0	0	Blue sky	
Calcutta (Alipore)	29.85	758.3	29.88	758.8	81.8	27.7	87	SW	4.0	1.8			0			0.69	17.5	D. clouds	
Goalpara	29.38	746.3	29.77	756.1	81.6	27.6	87	Calm	1.9	0.8			9		W	0	0	Gloomy	
Chittagong	29.83	757.8	29.93	760.1	82.9	28.3	83	SSW	5.3	2.4			6			0	0	D. clouds	
Sibsagar	29.52	749.9	29.86	758.5	75.2	24.0	92	NE	3.6	1.6			10	NW	NW				
Rangoon																			
Jubbulpore	28.44	722.4	29.79	756.8	84.5	29.2	67	S	1.0	0.4			5	S		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.36	568.0	30.17	766.2	45.3	7.4	55	NE			2		0			0	0		Ab. Dom. Morgini.
Stelvio	22.32	567.0	30.16	766.0	43.9	6.6		WNW			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.75	755.6	30.16	766.0	64.0	17.8	38	SE	3.8	1.7			0			0	0		Prof. Giovanni Clodig.
Padua	30.06	763.5	30.17	766.3	63.5	17.5	37	E	5.6	2.5			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.98	761.5	30.17	766.4	64.4	18.0	38	SE	2.5	1.1			0			0	0		Conte Alm. Da Schio.
Verona	29.99	761.8	30.17	766.4	70.7	21.5	33	NW			1		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.87	733.2	30.15	765.7	62.6	17.0	49	SW			2		0			0	0		Prof. Trionfini Carlo.
Domodossola	29.13	739.9	30.15	765.8	62.2	16.8	51	S			4		0			0	0		Prof. Giuseppe Calza.
Milan	29.67	753.6	30.19	766.7	59.0	15.0	68	W			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.87	758.7	30.22	767.5	59.9	15.5	45	NE			2		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.30	744.2	30.21	767.2	61.7	16.5	34	SSW	2.5	1.1			1			0	0		Prof. P. F. Denza.
Mondovi	28.28	718.3	30.18	766.6	59.0	15.0	23	NNW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.95	760.7	30.17	766.4	65.8	18.8	35	E			4		0			0	0		Prof. L. Vassallo.
Genoa	29.99	761.7	30.16	766.0	68.4	20.2	21	NW	3.1	1.4			0			0	0		Prof. G. M. Garibaldi
Piacenza	29.95	760.7	30.21	767.2	63.3	17.4	37	NE	2.5	1.1			0			0	0		Dott. G. Manzi.
Parma	29.87	758.8	30.19	766.7	65.1	18.4	42	SE			2		0			0	0		Prof. P. Pigorini.
Florence	29.95	760.6	30.18	766.5	66.2	19.0	31	N			4		0			0	0		Cav. F. Meucci.
Leghorn	30.02	762.5	30.10	764.6	68.0	20.0	25	ENE	3.1	1.4			0			0	0		Prof. P. Monte.
Siena	28.95	735.3	30.15	765.8	61.9	16.6	39	E	0	0			0			0	0		Prof. L. Toscani.
Urbino	28.64	727.4	30.19	766.7	59.4	15.2	48	NE			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.14	765.6	30.19	766.8	60.1	15.6	97	NW	19.2	8.6			0			0	0		Prof. Luigi Guidi.
Ancona	30.08	764.0	30.19	766.7	61.2	16.2	51	W			6		3			0	0		Prof. F. DeBosis.
Grosseto	30.07	763.6	30.17	766.4	66.9	19.4	41	NNW			4		3	S		0	0		Avv. P. Ponticelli.
Rome	29.97	761.3	30.15	765.7	68.2	20.1	49	W	6.3	2.8			5			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.96	760.9	30.15	765.9	72.0	22.2	40	SSE			2		3	SE		0	0		Prof. L. Palmieri.
Lecce	29.81	757.2	30.06	763.5	68.9	20.5	55	NNW	7.4	3.3			4	S		0	0		Prof. C. De Giorgi.
Cosenza	29.31	744.5	30.18	766.6	64.8	18.2	74	NW			1		6			0.008	0.2		Prof. F. D. Conti.
Cagliari	29.85	758.3	30.04	763.0	72.5	22.5	56	W			2		8	W					Prof. A. Pacinotti.
Riposto, (Sicily)	30.02	762.6	30.07	763.7	68.9	20.5	81	N			4		7	S		0.161	4.1		Prof. F. Cafiero.
Palermo	29.79	756.7	30.04	763.0	72.9	22.7	57	NE	1.8	0.8			8			0.004	0.1		Prof. G. Cacciatore.
Caltanissetta	28.15	715.0	30.02	762.5	69.4	20.8	59	NW			2		6			0	0		Prof. A. Pagani.
Syracuse	29.98	761.4	30.05	763.3	74.3	23.5	52	E			4		10	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.61	752.0	30.16	766.1	68.5	20.3	45	WSW	0	0			4	E		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.0 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.93	760.2	30.03	762.7	62	16.7	94	NE	3	1.3		1c				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	28.11	586.9	30.14	765.6	50.4	10.2	86	NW	1.2	0.51		0	3k		N	0	0	Clear	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.26	768.5	30.26	768.5	59.9	15.5		ENE			3					0.020	0.5		
Groningen	30.22	767.5	30.27	768.9	55.6	13.1		NW			1					0	0		
Helder	30.26	768.6	30.26	768.6	55.4	13.0		NNW			1					0	0		
Utrecht	30.23	767.7	30.27	768.9	58.8	14.9	67	NE			2		5			0	0	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.08	764.0	30.13	765.4	50.4	10.2	67	NNW	23.3	10.4			0			0	0		
Brône	29.79	756.6	29.83	757.6	39.2	4.0	70	NW	29	13			9			0.740	18.8	Light rain	
Christiania	29.81	757.2	29.96	760.9	58.1	14.5	20	NNW	18to20	8to 9			0			0	0		
Tromsö	29.36	745.7	29.40	746.8	32.4	0.2	89	NE	11	5			10			0.421	10.7		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.99	761.7	30.18	766.5	66.4	19.1	63	W	4.9	2.2			2			0	0		Dr. J. A. Sampaio
Campo Major	29.02	737.0	30.03	762.8	66.2	19.0	70	SSE	10.5	4.7			10	SSW		0.209	5.3		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.80	756.9	29.89	759.1	76.6	24.8	57	SW	4.9	2.2			4			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.64	752.8	29.99	761.8	67.3	19.6	72	S	13.7	6.1			10			0.283	7.2		The Staff.
Ponta Delgada, (Azores)	30.12	765.1	30.19	766.9	68.7	20 4	55	NE	2.5	1.1			2			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India, N. 38° 10′, W. 14° 24′			30.06	763.5	68.5	20.3	88	NNW			3		4		N	3			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.72	755.0	30.15	765.9	52.5	11.4	71	W	16	7			9						Astronomical Obs.
Wilna	29.45	748.0	29.87	758.7	52.0	11.1	82	W	4	2			10						Astronomical Obs.
Dorpat	29.31	744.5	29.55	750.6	52.9	11.6	49	WNW	16	7			1						Physical Cabinet.
St. Petersburg	29.29	743.9	29.30	744.3	48.6	9.2	55	WNW	29	13			8						Central Physical Obs.
Kuopio	28.89	733.7	29.20	741.7	44.1	6.7	71	NW	34	15			3					Raining	Ch. Forsten.
Kieff	29.45	748.1	30.10	764.5	50.7	10.4	84	W	13	6			10						Physical Cabinet.
Nikolaiev	30.20	767.1	30.27	768.9	60.1	15.6	53	Calm	0	0			1						Kurdakof.
Kertch	30.29	769.3	30.31	769.8	62.2	16.8	62	N	4	2			6						Lagorio.
Moscow	29.04	737.6	29.58	751.4	52.7	11.5	72	S	11	5			8						Meteorological Obs.
Lugan	29.94	760.4	30.14	765.5	54.9	12.7	58	WSW	13	6			5						Meteorological Obs.
Archangel	28.73	729.8	28.75	730.3	38.5	3.6	93	W	27	12			10					Raining	Ogorodnikof.
Tiflis	28.72	729.6	30.14	765.5	59.5	15.3	72	N	4	2			8						Physical Observatory.
Astrakhan	30.33	770.4	30.25	768.3	57.2	14.0	41	W	2	1			9						Sebastianof.
Kasan	29.41	746.9	29.68	753.8	46.2	7.9	65	SW	9	4			10						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	28.83	732.3	29.80	757.0	33.1	0.6	94	S	2	1			10						Meteorological Obs.
Nukuss	29.81	757.2	30.04	763.1	62.2	16.8	54	NE	13	6			9						
Kasaly																			Bobrof.
Tashkend	28.47	723.0	30.14	765.5	66.6	19.2	92	Calm	0	0			0						Michelson.
Barnaul	29.57	751.1	30.10	764.4	48.7	9.3	66	Calm	0	0			9						Meteorological Obs.
Yeniseisk	29.63	752.5	29.77	756.2	47.5	8.6	83	SSW	7	3			9			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.93	760.3	30.08	763.9	63.0	17.2	45	Calm	0	0			3						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock	29.79	756.7	29.83	757.7	61.3	16.3	90	SE	4	2			8n					Lightning	
Nikolaievsk, on the Amoor					53.6	12.0	97	E	7	3			3						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.: Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.86	707.5			63.7	17.6	74	SE	13.4	6.00		0	9			0.268	6.8	Almost cov'd	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.81	757.3	29.90	759.4	79.8	26.6	90	E	10.5	4.7		3c	2k	SE	E	1.028	26.1	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.93	760.3	30.03	762.8	75.4	24.1	68	S	23.9	10.7		2	6	S	NW	0.906	23.0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.88	759.0	83.5	28.6	83	SE	0	0		1cs	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.29	744.0	29.30	744.1	44.2	6.8	71	N			7		5			0	0		
Umea	29.48	748.8	29.53	750.1	48.2	9.0	71	NW			8		4			0	0		
Hernosand	29.60	751.7	29.65	753.0	50.7	10.4	37	NW			7		3			0	0		
Stockholm	29.56	750.9	29.73	755.2	56.1	13.4	76	W			6		5			0	0		
Wisby	29.77	756.2	29.83	757.7	51.4	10.8	83	WNW			6		5			0	0		
Sub-Series.																			
Upsala	29.68	753.8	29.75	755.7	53.4	11.9	88	WNW	19.9	8.9			2		NW	0	0		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.77	730.7	30.19	766.7	57.4	14.1	61	NNE			1		0			0	0	Clear	The Observatory.
Zurich	28.57	725.7	30.21	767.2	54.7	12.6	74	W			1		1			0	0	Clear.	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +4.1 mm; Thermometer, —1.9 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.26	768.7	64.8	18.2	56	NE	16	7.0			7		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.13	765.4	76.3	24.6		NW			1		8						B. Stefanidès.
Valona			30.17	766.3	69.1	20.6		NW			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			30.21	767.0	64.4	18.0		SE			2		2						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.97	761.2	86.5	30.3	53	N			3		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.84	757.9	29.91	759.7	57.1	13.9	55	NW	6	2.7			0			0	0		Hon. J. Ferguson.
Brockville, Ontario			30.23	767.8	42	5.6		Calm	0	0		Haze	Fog		N	0.23	5.8	Foggy	W. R. Bigg.
*Chatham, N. B			29.98	761.5	50	10.0	75	SW	6	2.7		0	0			0.03	0.8	Clear.	G. A. Blair.
Charlottetown, P. E. Island.			30.01	762.2	54	12.2	62	W	9	4.0		0	0			0.260	6.60	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.99	761.7	30.18	766.6	45.1	7.3	96	Calm			0		Fog			0	0	Foggy	James Smith, M. A.
Dalhousie, N. B	29.92	760.0	29.95	760.7	51	10.6	76	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.79	756 7	29.83	757.7	43.3	6.3	100	Calm	0	0		1ck	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			29.99	761.7	45	7.2	80	SW	32	14.3		2cs	0	W		0.39	9.9	Clear	J. McWilliams.
Fredericton, N. B	30.04	763.0	30.10	764.5	53.0	11.7	74	NW	9	4.0		0	0			0.15	3.8	Clear	Prof. Harrison.
*Fort Garry, Manitoba			29.55	750.6	57	13.9	93	SW	13	5.8		5k	5ks	SW	SW	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.32	744.7	30.09	764.3	63.9	17.7	83	SW			3	5c	0	W		0	0	Fair	H. J. Strang, M. A
Granton, Ontario	29.95	737.9	30.14	765.5	52	11.1	93	W			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S			29.99	761.7	56	13.3	81	NW	16	7.2		2cs	2ks	NW		0.178	4.52	Fair	F. Allison, M. A.
Hamilton, Ontario	29.82	757.4	30.19	766.8	56.9	13.8	81	SW			1					0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.94	760.5	29.97	761.2	44	6.7	88	SW			3		10n			0.02	0.5	Raining	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.26	768.6	51	10.6	100	NE	8	3.6			Fog		NE	Inap.	Inap.	Foggy	S. Woods, M. A
*Montreal, Quebec	30.01	762.2	30.21	767.3	51	10.6	96	Calm	0	0			Fog			0.28	7.1	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.17	766.3	50	10.0	93	E	5	2.2		2cs	5ks	NW	NW	0	0	Fair	Rev. R Mosley
Peterboro, Ontario	29.43	747.5	30.18	766.6	52.2	11.2	96	Calm			0		10			0	0	Smoke & fog.	J. F. Jeffers, B. A.
Port Dover, Ontario	29.49	749.0	30.18	766.6	52	11.1	86	N	6	2.7		Haze	Haze			0	0	Hazy	H. Morgan.
Port Hastings, N. S	29.86	758.4	29.91	759.7	60.5	15.8		NW	12	5.4						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.51	749.5	30.16	766.1	51	10.6	87	NE	3	1.3		0	0			0	0	Clear	M. Payne.
*Quebec, Quebec			30.16	766.1	50	10.0	79	SW	12	5.4		0	0			0.27	6.9	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario			30.22	767.6	42	5.6	98	SE	4	1.8			Fog			0	0	Foggy	W. H. McIntyre.
St. John, N. B	29.94	760.5	30.11	764.8	51	10.6	86	NW	2	0.9		7ck	0			0.11	2.8		G. Murdock, C. E.
*Saugeen, Ontario	29.41	747.0	30.11	764.8	51	10.6	85	S	8	3.6		5cs	Fog			0	0	Foggy	K. Stewart.
Stayner, Ontario			30.09	764.3	54	12.2	93	SE	5	2.2		10ck	0	S		0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.86	733.0	30.15	765.8	49.7	9.8	94	SE	3	1.3		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	29.85	758.2	29.88	758.9	57	13.9	80	W	11	4.9		0	2ks		W	0.10	2.5	Clear	T. C. Hill.
*Toronto, Ontario	29.82	757.4	30.20	767.1	56	13.3	87	NE	1	0.4		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery
Sub-Series.																			
St. Johns, Newfoundland					42.0	5.6	83	S				10k	10s			0.01	0.3	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford. 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.94	760.5	30.17	766.3	55	12.8	68	NW	8	3.6		0	0			1.05	26.7	Clear	
Alpena, Michigan	29.44	747.8	30.09	764.3	56	13.3	87	S	2	0.9			10s		S	0	0	Cloudy	
Atlantic City, New Jersey	30.03	762.7	30.05	763.3	68	20.0	94	NE	25	11.2			10s		NE	0	0	Cloudy	
Augusta, Georgia	29.89	759.2	30.07	763.8	66	18.9	89	NW	5	2.2		2cs	0	Calm		0	0	Fair	
Baltimore, Maryland	30.03	762.7	30.08	764.0	67	19.4	90	NE	4	1.8			10s;fg		Calm	0	0	Foggy	
Barnegat, New Jersey	30.05	763.3	30.07	763.8	68	20.0	94	NE	20	8.9			10s		NE	0.05	1.3	Cloudy	
Bismarck, Dakota	27.79	705.8	29.45	748.0	55	12.8	68	NW	1	0.4		5cs	Sm'e	SW		0	0	Fair	
Boise City, Idaho	27.05	687.1	29.58	751.3	55	12.8	68	Calm	0	0			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	30.02	762.5	30.18	766.6	59	15.0	76	NE	15	6.7			10s		NW	0.04	1.0	Cloudy	
Brackettville, Texas	28.82	732.0	29.82	757.4	69	20.6	56	Calm	0	0		2c	0	Calm		0	0	Fair	
Breckenridge, Minnesota	28.55	725.2	29.50	749.3	55	12.8	100	SE	12	5.4		0	0			0	0	Clear	
Brownsville, Texas	29.89	759.2	29.96	761.0	65	18.3	83	Calm	0	0		Haze	0			0	0	Clear	
Buffalo, New York	29.45	748.0	30.15	765.8	57	13.9	87	NE	3	1.3		0	Fog		Calm	Inap.	Inap	Clear	
Burlington, Vermont	29.94	760.5	30.20	767.1	49	9.4	85	NE	3	1.3		0	0			0.37	9.4	Clear	
Cairo, Illinois	29.74	755.4	30.12	765.0	69	20.6	90	N	2	0.9		0	0			0	0	Clear	
Camp Grant, Arizona								Calm				5c	5s	Calm	Calm	0	0	Threatening	
Camp Verde, Arizona	26.75	679.4	30.24	768.1	58	14.4	64	E	2	0.9		5ck	0	W		0	0	Fair	
Campo, California	27.27	692.6	29.84	757.9	52	11.1	48	NE	18	8.0			10n		NE	4.34	110.2	Light rain	
Cape Hatteras, N. Carolina	29.55	750.6	29.56	750.8	73	22.8	95	NE	50	22.4			10n		NE	3.08	78.2	Light rain	
Cape Henry, Virginia	29.85	758.2	29.88	758.9	71	21.7	95	N	30	13.4			10n		NE	1.53	38.9	Light rain	
Cape Lookout, N. Carolina	29.64	752.8	29.65	753.1	70	21.1	100	N	14	6.3			10s		NE	0	0	Cloudy	
Cape May, New Jersey	30.01	762.2	30.04	763.0	69	20.6	90	NW	12	5.4		5ck;cs	0	NW		0	0	Fair	
Charleston, South Carolina	29.91	759.7	29.97	761.2	70	21.1	71	W	4	1.8		0	0			0	0	Clear	
Cheyenne, Wyoming	23.98	609.1	29.92	760 0	42	5.6	30	S	8	3.6		0	Fog		Calm	0	0	Foggy	
Chicago, Illinois	29.35	745 5	30.02	762.5	65	18.3	84	S	2	0.9			Fog		S	0	0	Foggy	
Cincinnati, Ohio	29.42	747.3	30.05	763.3	65	18.3	83	SE	6	2.7			Fog		Calm	0	0	Foggy	
Cleveland, Ohio	29.44	747.8	30.16	766.1	59	15.0	100	NW	4	1.8		4c		NW		0	0	Clear	
Concho, Texas	28.10	713.7	29.75	755 6	60	15.6	59	E	2	0.9		2cs	0	Calm		0	0	Clear	
Corsicana, Texas	29.54	750.3	30.00	762.0	65	18.3	89	S	8	3.6		0	0			0	0	Clear	
Davenport, Iowa	29.38	746.2	30.00	762.0	65	18.3	83	SE	4	1.8		0	0			0	0	Clear	
Denison, Texas	29.24	742.7	30.02	762.5	67	19.4	83	S	8	3.6		0	0			0	0	Clear	
Denver, Colorado	24.71	627.6	29.93	760.2	53	11.7	35	NE	1	0.4			Fog		Calm	0	0	Foggy	
Detroit, Michigan	29.45	748.0	30.11	764.8	58	14.4	87	S	14	6.3		0	0			0	0	Clear	
Dodge City, Kansas	27.34	694 4	29.54	750.3	64	17.8	78	S	5	2.2		0	0			0	0	Clear	
Dubuque, Iowa	29.30	744.2	29.98	761.5	65	18.3	83	NE	1	0.4			10ks		E	Inap.	Inap.	Cloudy	
Duluth, Minnesota	29.06	738.1	29.72	754.9	53	11.7	93	Calm	0	0		1c	0	NW		0	0	Clear	
Eagle Pass, Texas	29.17	740.9	29.89	759.2	68	20.0	65	NW	8	3.6		10c	0	N		0.21	5.3	Cloudy	
Eastport, Maine	30.04	763.0	30.11	764.8	54	12.2	79	N	4	1.8		0	Fog			0	0	Foggy	
Erie, Pennsylvania	29.42	747.3	30.12	765.0	62	16.7	88	S	9	4.0			10s		SW	0.72	18.3	Cloudy	
Escanaba, Michigan	29.28	743.7	29.92	760.0	61	16.1	94	S					10s		S	0	0	Cloudy	
Florence, Arizona	29.26	743.2	29.86	758.4	82	27.8	35	NW	6	2.7			10s		SW	0	0	Cloudy	
Fort Bayard, New Mexico	24.09	611.9	30.09	764.3	61	16.1	35	Calm	0	0			10s		Calm	0	0	Cloudy	
Fort Craig, New Mexico	25.52	648.2			60	15.6	39	SE	6	2.7		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.48	748.8	30.00	762.0	66	18.9	84	Calm	0	0		0	2s		Calm	0	0	Fair	
Fort Griffin, Texas	28.73	729.7	29.99	761.7	67	19.4	79												
Fort St. Michael, Alaska								Calm	0	0		5cs	0	W		0	0	Fair	
Fort Sill, Indian Territory	28.78	731.0	29.86	758.4	65	18.3	89	N	1	0.4		0	0			0	0	Clear	
Fort Sully, Dakota	27.92	709.2	29.47	748.5	64	17.8	47	SE	5	2.2		0	0			0	0	Clear	
Galveston, Texas	29.92	760.0	29.96	761.0	76	24.4	95	SE	5	2.2		0	Fog		Calm	0	0	Clear	
Grand Haven, Michigan	29.40	746.7	30.03	762.7	62	16.7	94	Calm	0	0		0	Sm'e			0	0	Clear	
Indianapolis, Indiana	29.33	745.0	30.09	764.3	64	17.8	83	N	12	5.4		2k	0	N		0	0	Clear	
Indianola, Texas	29.96	761.0	29.99	761.7	75	23.9	85												
Jacksboro, Texas								NW	6	2.7		5k	0	NW		0	0	Fair	
Jacksonville, Florida	29.98	761.5	30.00	762.0	70	21.1	79	SW	8	3.6		0	0			0	0	Clear	
Keokuk, Iowa	29.38	746.2	29.97	761.2	70	21.1	79	NE	13	5.8		5cs	5ks	S	SE	1.14	29.0	Cloudy	
Key West, Florida	29.87	758.7	29.90	759.4	80.0	26.7	80	NE	46	20.6			10ks		NE	5.44	138.2	Cloudy	
Kittyhawk, North Carolina	29.73	755.1	29.75	755.6	70	21.1	90	NE	2	0.9		0	Sm'e			0	0	Smoky	
Knoxville, Tennessee	29.12	739.6	30.11	764.8	61	16.1	94	S	16	7.2		0	0			0	0	Clear	
La Crosse, Wisconsin	29.15	740.4	29.86	758.4	66	18.9	84	Calm	0	0			10s		SW	0	0	Cloudy	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	68	20.0	50	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					68	20.0	90	S	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.14	740.1	29.96	761.0	63	17.2	88	NE	2	0.9		0	0			0	0	Clear	
Los Angeles, California	29.45	748.0	29.78	756.4	61	16.1	48	N	1	0.4		0	Fog		N	0	0	Foggy	
Louisville, Kentucky	29.54	750.3	30.09	764 3	66	18.9	94	NW	4	1.8		10c	0	NW		Inap.	Inap.	Cloudy	
Lynchburg, Virginia	29.37	746.0	30.03	762.7	70	21.1	75	N				2k	5s	SW	S	0	0	Cloudy	
Maricopa Wells, Arizona					70	21.1	45	S	8	3.6		0	0			0.40	10.2	Clear	
Marquette, Michigan	29.16	740.7	29.83	757.7	59	15.0	81	Calm	0	0		2c	2s	W		0	0	Fair	
Mason, Texas	28.36	720.3	30.07	763.8	67	19.4	60	NE	3	1.3		0	Fog		Calm	0	0	Clear	
Memphis, Tennessee	29.78	756.4	30.09	764.3	68	20.0	90	SW	8	3.6		0	Sm'e		SW	0	0	Clear	
Milwaukee, Wisconsin	29.36	745.7	30.03	762.7	62	16.7	88	S	4	1.8		0	0			0.05	1.3	Clear	
Mobile, Alabama	29.97	761.2	30.02	762.5	71.5	21.9	92	N	3	1.3		0	Haze		Calm	0	0	Clear	
Montgomery, Alabama	29.85	758.2	30.08	764.0	69	20.6	92	Calm	0	0			Fog			0	0	Foggy	
Morgantown, West Virginia	29.07	738.4	30.10	764.5	64	17.8	83	N	25	11.2		2c	2s	N	N	0.20	5.1	Clear	
Mt. Washington, N. H.	23.96	608.6	30.32	770.1	38	3.3	24	Calm	0	0		0	Haze		Calm	0	0	Clear	
Nashville, Tennessee	29.59	751.6	30.11	764.8	65	18.3	89	NE	12	5.4			10s;fg		NE	0	0	Cloudy	
New Haven, Connecticut	30.00	762.0	30.12	765.0	67	19.4	90	N	4	1.8			10s;fg		W; Calm	Inap.	Inap.	Cloudy	
New London, Connecticut	30.08	764.0	30.13	765.3	66	18.9	90	NE	9	4.0		0	0			0	0	Clear	
New Orleans, Louisiana	29.92	760.0	29.97	761.2	75	23.9	81	N	8	3.6			10ks		NE	0	0	Threatening	
Newport, Rhode Island	30.08	764.0	30.13	765.3	64	17.8	94	NE	10	4.5			10s;fg		N; Calm	0	0	Cloudy	
New York, New York	29.93	760.2	30.10	764.5	69	20.6	90	NE	17	7.6			10n		NE	2.00	50.8	Light rain	
Norfolk, Virginia	29.85	758.2	29.90	759.4	69	20.6	90	S	16	7.2		0	0			0	0	Clear	
North Platte, Nebraska	26.90	683.2	29.41	747.0	51	10.6	71	S	5	2.2			1s		SW	0.53	13.5	Clear	
Olympia, Washington Ter.	29.83	757.7	29.87	758.7	44	6.7	92	S	10	4.5		0	0			0	0	Clear	
Omaha, Nebraska	28.77	730.7	29.80	756.9	64	17.8	89	Calm	0	0		5c	Sm'e	NW		0	0	Fair	
Oswego, New York	29.87	758.7	30.19	766.8	57	13.9	75	S	8	3.6		5ck	0	Calm		0	0	Fair	
Pembina, Dakota	28.74	730.0	29.54	750.3	51.5	10.8	82	NE	10	4.5			10ks		NE	0	0	Cloudy	
Philadelphia, Pennsylvania	30.03	762.7	30.08	764.0	68	20.0	90	S				10k	0	SE		Inap.	Inap.	Cloudy	
Phœnix, Arizona					75	23.9	36	W	20	8.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.96	456.2	30.16	766.1	28	— 2.2	48	SW	4	1.8		0	0			0	0	Clear	
Pioche, Nevada	24.01	609.8	29.78	756.4	56	13.3	24	NW	3	1.3			Fog		Calm	0	0	Foggy	
Pittsburg, Pennsylvania	29.30	744.2	30.10	764.5	58	14.4	100	SE	2	0.9		0	Sm'e			0	0	Smoky	
Port Huron, Michigan	29.45	748.0	30.11	764.8	55	12.8	73	N	3	1.3		2k	Haze	Calm		0.32	8.1	Fair	
Portland, Maine	30.12	765.0	30.17	766.3	57	13.9	81	S	4	1.8			8ks		S	0.25	6.3	Cloudy	
Portland, Oregon	29.88	758.9	29.98	761.5	47	8.3	92	SE					8s		S	0	0	Cloudy	
Prescott, Arizona					57	13.9	31	E	4	1.8			10n		Calm	0.23	5.8	Light rain	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	76	24.4	81	NW	3	1.3			10s		Calm	0	0	Cloudy	
Red Bluff, California	29.14	747.8	29.78	756.4	70	21.1	44	SE	2	0.9		1c	Fog	Calm	Calm	0	0	Fair	
Rochester, New York	29.56	750.8	30.17	766.3	55	12.8	80												

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.42	747.3	29.99	761.7	50	10.0	96	W	2	0.9	.....	5cs	5n	Calm	W	0.69	17.5	Light rain	
Sacramento, California	29.73	755.1	29.81	757.2	61	16.1	77	S	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.52	749.8	30.08	764.0	67	19.4	89	S	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear.	
St. Marks, Florida	30.00	762.0	30.02	762.5	72	22.2	85	NE	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	
St. Paul, Minnesota	28.88	733.5	29.66	753.4	65	18.3	83	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.51	647.9	29.84	757.9	60	15.6	29	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.27	743.4	29.84	757.9	69	20.6	74	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.72	754.9	29.78	756.4	65	18.3	73	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.48	748.8	30.14	765.5	66	18.9	84	SW	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sandy Hook, New Jersey	30.07	763.8	30.09	764.3	68	20.0	94	NE	9	4.0	.....	.....	10ks	.....	NE	0.01	0.3	Cloudy	
San Francisco, California	29.82	757.4	29.89	759.2	59	15.0	87	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	53	11.7	23	E	8	3.6	.....	Haze	2s	.....	Calm	0	0	Fair	
Savannah, Georgia	29.94	760.5	30.03	762.7	67	19.4	84	N	10	4.5	.....	8c	0	SW	.....	0	0	Fair	
Shreveport, Louisiana	29.80	756.9	30.02	762.5	73	22.8	85	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.78	756.4	29.82	757.4	67	19.4	90	N	16	7.2	.....	.....	10s	.....	N	0.71	18.0	Cloudy	
Springfield, Massachusetts	29.96	761.0	30.08	764.0	63	17.2	78	N	7	3.1	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	66	18.9	29	Calm	.....	.....	.....	0	2ks	.....	NW	0	0	Fair	
Stockton, Texas	.....	.....	.....	.....	62	16.7	61	S	4	1.8	.....	0	2s	.....	Calm	0	0	Fair	
Thatcher's Island, Mass.	30.13	765.3	30.18	766.6	58	14.4	69	NE	20	8.9	.....	5k	2s	NW	NW	0	0	Clearing	
Toledo, Ohio	29.46	748.3	30.12	765.0	66	18.9	90	E	4	1.8	.....	0	5ks	.....	SW	0	0	Fair	
Tucson, Arizona	27.53	699.2	30.08	764.0	76	24.4	52	S	.....	.....	.....	.....	10s	.....	SW	0.21	5.3	Cloudy	
Tybee Island, Georgia	29.98	761.5	30.01	762.2	69	20.6	69	NW	20	8.9	.....	5ck	0	NW	.....	0	0	Fair	
Umatilla, Oregon	29.53	750.0	.....	.....	50	10.0	64	W	8	3.6	.....	2k	0	Calm	.....	0	0	Clear.	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	72	22.2	80	E	6	2.7	.....	0	0	.....	.....	0.52	13.2	Clear	
Virginia City, Montana	24.06	611.1	29.54	750.3	46	7.8	92	SW	4	1.8	.....	.....	10n	.....	Calm	0.22	5.6	Heavy rain	
Visalia, California	29.47	748.5	29.84	757.9	53	11.7	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.96	761.0	30.07	763.8	66	18.9	94	NE	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	63	17.2	26	S	.....	.....	.....	0	8s	.....	Calm	0	0	Fair	
Wilmington, N. Carolina	29.74	755.4	29.81	757.2	67	19.4	84	N	20	8.9	.....	.....	10s	.....	N	1.50	38.1	Cloudy	
Winnemucca, Nevada	25.47	646.9	29.83	757.7	61	16.1	20	SW	12	5.4	.....	10k	0	SW	.....	0	0	Cloudy	
Wood's Holl, Mass.	30.08	764.0	30.13	765.3	63	17.2	94	NW	6	2.7	.....	.....	10s	.....	NW	0	0	Threatening	
Yankton, Dakota	28.46	722.9	29.68	753.9	65	18.3	73	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear.	
Yuma, Arizona	29.64	752.8	29.80	756.9	62	16.7	36	E	1	0.4	.....	8k	0	E	.....	0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.55	750.6	29.60	751.8	30.5	— 0.8	95	W	2	0.9	.....	.....	10s	.....	.....	0	0	Threatening	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.83	757.7	29.85	758.2	80	26.7	00	SE	4.8	2.1	.....	8c	4ks	Calm	E	1.15	29.2	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	83	28.3	83	Calm	0	0	.....	8c	5s	SE	.....	0.02	0.5	.....	James Gall.
Santiago de Cuba, W. I.	29.96	761.0	29.97	761.2	81	27.2	78	Calm	0	0	.....	1cs	1ck	Calm	Calm	0	0	Fine	T. W. Beattie.
Navassa, W. I.	29.86	758.4	29.94	760.5	84	28.9	.....	E	.....	.....	2	.....	.....	.....	.....	0	0	Clear	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	88	31.1	69	SE	.....	.....	.....	2c	2ks	E	.....	0	0	.....	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.82	757.4	29.84	757.9	82	27.8	87	E	.....	.....	.....	0	5ks	.....	E	.....	.....	.....	L. V. Bigard.
Bridgetown, Barbados, W. I.	29.99	761.7	30.01	762.2	82	27.8	74	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	E. Racker.
Paramaribo, D. Guiana, S. A.	.....	.....	30.02	762.5	84	28.9	75	E	.....	.....	2	5k	0	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3	.....	.....	69.0	20.6	78	Calm	.....	.....	0	1cs;k	2ks	.....	.....	0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.: Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.89	759.2	64	17.8	61	16.1	88	W	15	6.7			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.15	765.8			77	25.0	82	NE	14	6.3			3			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.23	767.8	68	20.0	58	14.4	76	NE			1					0	0			Clearing	
Naval Hospital, Yokohama, Japan	29.92	760.0	70	21.1	65	18.3	94	NNW			1		Haze		Calm	0	0			Clear	
Adams, Montevideo, Uraguay	30.31	769.9	70	21.1	51	10.6	72	S			2		10		S	0	0			D. clouds	
Alert, Hakodadi, Japan	30.12†	765.0†	63	17.2	62	16.7	94	Calm			0		2		NW					D clouds	
Alliance, Constantinople, Turkey.	30.35	770.9	66	18.9	67	19.4	60	NNE			3–4		6		N&E					Pleasant	
Ashuelot, Che-foo, China	30.04	763.0	79	26.1	67	19.4	37	N			4		1					Smooth		Hazy	
Canonicus, New Orleans, La	30.00	762.0	54	12.2	74	23.3	95	NE			2		3							Fair	
Colorado, New York, N. Y.	30.19	766.8	70	21.1	69	20.6	90	NE	7	3.1			10		NNE	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	30.39	771.9	68	20.0	65	18.3	68	NNE			3–5		4		NE			Smooth			
Essex, Off Tenerife	30.06	763.5	78	25.6	81	27.2	87	ESE			4		7					Smooth	N	D. clouds	
Franklin, Norfolk, Va.	29.98	761.5	68	20.0	70	21.1	95	ENE	19.2	8.6			6		ENE	2.1	53.			Raining	
Frolic, N. 11° 05′, W. 56° 07′	30.15	765.8	85	29.4	82	27.8	96	N			1–2		5k		Calm	0	0	Smooth		D. clouds	
Gettysburg, N. 39° 05′, E. 13° 30′	29.95‡	760.7‡			74	23.3	100	NNE			2		4		Calm	0	0	Light	NNE	D. clouds	
Kearsarge, Singapore, India	29.92	760.0			82	27.8	87	NNW			1–2		2		N&W	0	0	Smooth		Hazy	
Lackawana, Nanaimo, B. C.	29.85	758.2			45	7.2	84	Calm			0		2					Smooth		D. clouds	
Marion, Smyrna, Turkey	30.10	764.5	74	23.3	76	24.4	56	ENE			2		4		ENE	0	0	Smooth		D. clouds	
Monocacy, Hakodadi, Japan	29.93	760.2	60	15.6	58	14.4	82	NNW			1		2		NW	0	0	Smooth		D. clouds	
Monongahela, N. 39° 26′ 19″, W. 65° 22′.	30.19	766.8	74	23.3	74	23.3	76	SSW			4		ks					Smooth		Hazy	
New Hampshire, Port Royal, S. C.	30.10	764.5			70	21.1	75	NNW	16	7.2			8							D. clouds	
Omaha, S. 32° 15′, W. 75° 15′	30.07	763.8	63.5	17.5	63.5	17.5	80	WSW	3	1.3			2		W	0	0	Light	W	Clear	
Onward, Callao, Peru	30.02	762.5	69	20.6	68	20.0	84	S			2		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.15	765.8	72	22.2	69	20.6	90	NE			2		10		NNE					Foggy	
Palos, Poo-too Island, China	30.10	764.5	73	22.8	72	22.2	76	SSE			2		5		Calm			Light	S&E	Misty	
Pensacola, Mare Island, Cal.	29.97	761.2			67	19.4	74	SW			1		0			0	0			Clear	
Plymouth, New York, N. Y.	30.48	774.2	74	23.3	70	21.1	95	W			1		10		W					Hazy	
Ranger, Nagasaki, Japan	30.10	764.5			70	21.1	75	Calm			0		0					Smooth		Clear	
Rio Bravo, Brownsville, Texas	29.87	758.7			67	19.4	95	NW			1		2		NW					D. clouds	
Santee, Annapolis, Md.	30.13	765.3	69	20.6	68	20.0	90	NE			3		9		NE	0.06	1.5			Cloudy	
St. Louis, League Island, Pa	30.04	763.0	70	21.1	69	20.6	90	NNE	7	3.1			10		NE	0.01	1.3			Overcast	
Tennessee, N. 40° 44′, E. 141° 52′	29.99	761.7	70	21.1	67	19.4	60	SSE	20	8.9			0			0	0	Moderate.	S&E	Blue sky	
Trenton, Marseilles, France	30.20	767.1	70	21.1	67	19.4	84	WSW	4	1.8			0			0	0			Blue sky	
Vandalia, Smyrna, Turkey	30.14	765.5	75	23.9	76	24.4	52	NE			3		2		NE					D. clouds	
Wabash, Boston, Mass.	30.21	767.3	61	16.1	61	16.1	66	NE	12	5.4			7			0.03	0.8			D. clouds	
Wyoming, Washington, D. C.	30.26†	768.6†	70	21.1	69	20.6		E			1		10							Misty	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 42° 00′, E. 156° 14′			30.30*	769.6*	60	15.6	65	WNW			1		4		WNW	Smooth	WNW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 35° 56′, E. 141° 53′					70	21.1		E			6		2		ESE	Smooth	ENE	Fine	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 47° 8′, W. 25° 27′			29.98	761.5	57.0	13.9	81	NW			6		10		NW	Rough	N	Overcast	Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md.			30.09	764.3	69.0	20.6	95	N			1		10					Damp	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction From—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois N. 51° 35′, W. 26° 21′			*29.61	*752.1	58	14.4	??	SE			6		9		S	Moderate.	SSE	Misty	Captain Shackelford.
S. S. Indiana, N. 40° 58′, W. 66° 00′			30.21†	767.3†	68	20.0		N			6		4		NNE	Moderate	WNW	Fine	Captain Sargent.
S. S. Ohio, N. 52° 00′, W. 17° 56′			*30.00	*762.0	58	14.4	88	ESE			3		10		ESE	Small	SE	Overcast	Captain Morrison. Captain Harris.
S. S. Pennsylvania																			

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.93	760.2	70	21.1	80	NW	9	4.0		2ck	0	SW				Clear	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 30, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.07	763.6	75.6	24.2	66	NNW			1		5			0	0	Fair	Michel.
Algiers			29.92	760.0	75.2	24.0	75	WSW			1		6			0	0	Fair	Peter.
La Calle			30.01	762.2	73.8	23.2	69	S			1		8			0.118	3.0	Cloudy	Fleury.
Tunis			29.98	761.6	75.2	24.0		E			4		2					Clear	Jacques.
Sfax			29.98	761.5	80.6	27.0		ENE			3		6			0.039	1.0	Fair	Husson.
Saida			30.02	762.4	64.2	17.9		NNW			2		6			0.567	14.4	Fair	Millot.
Tebessa			29.93	760.3	73.2	22.9		SE			3		10			0	0	Hidden	Bourgeois.
Geriville			29.98	761.5	61.7	16.5	66	NE			2		5			0.512	13.0	Fair	Lemaillot.
Laghouat			30.02	762.4	75.2	24.0	58	W			3		4			0.984	25.0	Fair	François.
Biskra			30.03	762.8	81.0	27.2	58	NW			1		10			Inap.	Inap.	Hidden	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7?? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.63	752.5	30.17	766.4	60.1	15.6	64	NE			2		10			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.52	749.7	30.29	769.3	55.4	13.0	64	W					10			0	0		Dr. Wierzbiski.
Eperies	29.34	745.1	30.22	767.5	55.4	13.0	62	Calm			0		8		Calm	0	0		Julius Mikolik.
Gratz	28.90	734.0	30.15	765.9	55.9	13.3	85	SSW			1		1			0	0		Andreas Rospini.
Hermannstadt	28.71	729.2	30.11	764.9	61.2	16.2	51	ESE			1		0			0	0		Prof. Reissenberger.
Kremsmünster	28.76	730.4	30.10	764.4	54.7	12.6	70	E			4		0			0	0		Prof. C. Wagner.
Lemberg	29.10	741.3	30.18	766.6	52.0	11.1	80	NW			2		9			0	0		Dr. T. Stanecki.
Pola	30.02	762.5	30.13	765.3	65.3	18.5	49	WNW			2		3s			0	0		I.R.Hydrographic Office
Szathmar																			Johann Tamas, S. J.
Szegedin	29.88	758.9	30.16	766.0	63.0	17.2	50	S			1		0			0	0		Karl Stancel.
Trieste	30.05	763.5	30.16	766.1	64.8	18.2	73	W			1		0			0	0	Clear	P. Busin.
Vienna	29.50	749.3	30.19	766.9	61.2	16.2	75	ESE			1		0			0	0		I. R. Central Met.Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.63	727.3	30.13	765.3	60.4	15.8	58	E			3		1			0	0		Royal Observatory.
Brussels	29.95	760.6	30.15	765.8	52.3	11.3	86	NNE			2	1				0	0		
Furnes	30.11	764.7	30.13	765.3	64.4	18.0	68	E			0		3			0	0	Foggy	
Maeseyck	30.04	763.0	30.17	766.3	60.4	15.8	69	E			4		2			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	30.19	766.8	30.29	769.4	52.0	11.1		SE	11	4.9			6			0	0	D. clouds	C. H. Thompson; W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			30.19	766.8	57.2	14.0		SE	10	4.5									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.20	767.1	56.7	13.7		E	14	6.3			7					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.14	765.5	59.8	15.4		SE			1		7					D. clouds	J. Dreyer.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)			29.94	760.5	84.0	28.9		NE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.18	766.6	61.0	16.1		E			1		7					D. clouds	H. Todd. [H.C.
Cardington			30.20	767.1	59.4	15.2		E			1		6					D. clouds	John McLaren.
Chatham, School M. E.	30.03	762.7	30.16	766.1	61.2	16.2		NE			2		3					Fine	F. Magawran, Q. M. Sergt. R.E.
Dartmoor	28.68	728.5	30.16	766.1	54.0	12.2		E			4		9					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.17	766.3	30.20	767.1	57	13.9		E			2		7					D. clouds	J. Mac Gowan.
Dover	30.14	765.5	30.16	766.1	59	15.0		NE			3		2					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.20	767.1	60.0	15.6		SE	2.8	1.3			7					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.89	759.2	30.12	765.0	59.0	15.0		E			4		9					Foggy	The Staff.
Fort Napier, (Natal)	28.11	714.0	30.33	770.4	58.0	14.4		E			2		10					Overcast	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.97	761.2	86	30.0		N			0		3					D. clouds	
Galway, Queen's College			30.15	765.8	59	15.0		NW			1		3					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.04	763.0	30.07	763.8	74.0	23.3		W			2		2					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	30.05	763.3	30.25	768.3	54.9	12.7		ENE			3		8					Gloomy	D. G. Maclean.
Great Yarmouth	30.21	767.3	30.22	767.6	57	13.9		E			2		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.01	762.2	30.18	766.6	62.2	16.8		E			1		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.88	758.9	30.10	764.5	63.5	17.5		NE			1		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.11	764.8	61	16.1		E			4		6			0	0	D. clouds	M. P. Moyle.
Holyhead	30.12	765.0	30.18	766.6	58	14.4		WNW			1		1					Blue sky	John Tilston.
Jersey	29.84	757.9	30.13	765.3	65.0	18.3		E			2		9					Gloomy	J. Fisher.
Kew, Observatory			30.18	766.6	58.6	14.8		E	10	4.5			7k					Hazy	The Staff.
Kingstown	30.14	765.5	30.17	766.3	57	13.9		SE			3		9					Overcast	George Mitchell.
Leicester, Museum			30.19	766.8	56.8	13.8		E			1		8					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.84	757.9	29.91	759.7	74.2	23.4		NE			2		8			Blank	Blank	Overcast	Corp'l. P. Bravis, A.H.C.
Nairn	30.13	765.3	30.23	767.8	52	11.1		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			29.88	758.9	84.5	29.2		NE			1		10			Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	30.03	762.7	30.22	767.6	61.7	16.5		SE			3		7k; ks		ESE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.66	753.4	30.18	766.6	60.2	15.7		ENE			2		7					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.17	766.3	59	15.0		E			1		8					Overcast	F. Lucas
Plymouth	30.05	763.3	30.12	765.0	59.7	15.4		ENE			4		10					Overcast	John Merrifield.
Roche's Point	30.07	763.8	30.12	765.0															W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			30.28	769.1	53	11.7		SSE	19	8.5			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.11	764.8	66.8	19.3		NE			2		8					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.99	761.7	30.23	767.8	60.7	15.9		NE			1		7			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.19	766.8	30.22	767.6	60.4	15.8	61	E			1		0			0	0	Hazy	Rev. F. Redford, M. A.
Stonyhurst, Observatory					56.1	13.4		NE			1		7					D. clouds	W. C. Carlisle, for Rev. S. J. Perry
Stornoway, Lewis C., (Hebr.)			30.18	766.6	54	12.2		SE			1		8					D. clouds	John Smith.
Stratfield Turgiss	29.96	761.0	30.17	766.3	60.9	16.1		E			1		6					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.24	768.1	56	13.3		S			3		6					D. c'ouds	John Trotter.
Truro, Royal Institution			30.14	765.5	63	17.2		E			3		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.08	764.0	62.0	16.7		SE	7	3.1			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)																			Henry Mercer.
Cape Good Hope, Obs'y	30.10	764.5	30.14	765.5	78.9	26.1	36	SSE	10	4.5		0	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.84	757.9	53.0	11.7	88	S			2		10n			0	0	Cloudy	Francis Abbott, F.R.A.S
Leith, Restalrig Park			30.26	768.6	54.0	12.2		E			2		10s			0	0	Overcast	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.11	764.8	75.6	24.2	69	S	9.1	4.1		0	9		SW	0	0	Dull	C. Meldrum.
Melbourne, Observatory	29.97	761.2	30.06	763.5	52.0	11.1	78	W	12	5.4			10			0.14	3.6	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.21	767.3	55	12.8		SSE			3		10			0.3	8.		J. Youngclause.
North Unst, (Shetland Is.)			30.30	769.6	51	10.6		S			3	2	3		E				Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 43° 10′, W. 52° 32′			29.95	760.7	55	12.8		WNW			4		7			0*		D. clouds	Capt. W. Watson.
S. S. Batavia, N. 50° 55′, W. 24° 50′			30.17	766.3	59	15.0		WNW			6		4			6	WNW	D. clouds	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 19′, W. 34° 0′			29.87	758.7	56	13.3		SSW			6		7			7	W	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 42° 55′, W. 51° 0′			29.91	759.7	54	12.2		WNW			6		8			4	N	D. clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.19	665.2			69.8	21.0	95	SE			1		1c			Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.30	769.5	30.34	770.7	53.1	11.7	53	SE			2		0						
Fanöe	30.24	768.0	30.26	768.5	57.4	14.1	77	WSW			2		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.96	761.0	30.00	762.1	48.7	9.3	98	SE			2		8						
Thorshavn, (Faröe)																			
Vestervig	30.13	765.4	30.30	769.7	55.2	12.9	82	E			2		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.57	751.0	30.12	765.0	59.0	15	68	ENE			1		1		NE	0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvarne, Director.
Avignon, Normal School	30.04	762.9	30.11	764.9	69.1	20.6	40	N			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.53	750.1	30.09	764.2	66.0	18.9	35	E			1		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais																			Normal School.
Besançon	29.25	743.0	30.15	765.9	59.2	15.1	68	SSW			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.26	743.1	30.18	766.5	65.7	18.7	64	SW			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.56	750.8	30.11	764.7	60.4	15.8	67	E			2					0	0		A. Wagner, Director.
Brest, Naval Observatory	29.77	756.2	29.99	761.7	73.2	22.9	64	Calm			0		1		Calm	0	0		The Staff.
Carcassonne, Normal School	29.72	754.8	30.13	765.3	69.4	20.8	48	E			2		2			0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School																			Dumoulié, Director.
Châlons-sur-Marne, N. Sch'l	29.82	757.3	30.13	765.2	67.3	19.6	64	SE			1		0			0	0	Clear.	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.6	30.04	763.0	70.0	21.1	22	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.30	744.2	30.20	767.0	54.7	12.6	74	E			2		0			0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.02	737.1	30.16	766.1	69.4	20.8	36	SW			2		2		SW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.79	756.7	30.10	764.5	63.1	17.3	61	E			2		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.25	743.0	30.17	766.2	58.6	14.8	69	NNW			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	29.99	761.8	30.09	764.3	68.7	20.4	59	S			3		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.38	746.2	30.06	763.4	64.6	18.1	73	NE			4		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.20	741.7	30.25	768.3	52.9	11.6	58	NNE			1					0	0		Normal School.
Nismes, Normal School	29.78	756.5	29.98	761.6	65.5	18.6	42	N			2		0			0	0	Clear	Boyer, Director.
Orleans, Normal School																			Bernard, Director.
Paris, Observatory	29.87	758.6	30.10	764.6	61.3	16.3	58	E			1	1c				0	0	Clear	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.04	763.0	30.07	763.8	70.9	21.6	38	ESE			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.03	762.8	30.12	765.0	64.8	18.2	51	SE			1		0			0	0	Clear.	F. Lucard, Director.
Tarbes, Normal School	29.00	736.6	30.04	763.1	72.7	22.6	47	W			1		8		E	0	0	Very cloudy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.5	29.81	757.2	82.8	28.2										0.08	2		L'Abbé Marchési.
Marseilles, Observatory			30.11	764.8	70.0	21.1	45	S			1		0			0	0		The Staff.
Mont-Louis	24.93	633.2	30.24	768.2	52.5	11.4	51	ESE	9.3	4.17			2		SSE	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.82	757.5	30.10	764.5	62.8	17.1	58	NE			1		1			0	0		Marié Davy, Director.
Perpignan			30.11	764.9	61.9	16.6	68	E	5.6	2.50			8		SE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.34	542.1			41.9	5.5		NW			3		9					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.58	573.6			40.8	4.9		NW			3		9			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.94	760.4	30.10	764.6	63.5	17.5	52	N			1		0			0	0	Clear	E. Renou.
Toulouse, Observatory	29.35	745.6	30.08	764.0	66.4	19.1	49	SSE			2		2			0	0		The Staff.
Tours	29.97	761.1	30.16	766.1	68.0	20.0		E			1		3		E	0	0		C. Marquet.
Versailles, (near Paris)			30.11	764.8	63.7	17.6	47	E			1		1			0	0	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.03	762.7	30.06	763.4	64.8	18.2	66	N	9.2	4.1			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,266 m., or 7,431.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.12	765.0	30.29	769.4	58.1	14.5	69	E			1		3			0	0		Prof. Arndt.
Breslau	29.79	756.6	30.32	770.2	55.0	12.8	76	N			0		10			0	0	Foggy	Royal University Obs'y.
Carlsruhe	29.69	754.0	30.11	764.8	62.2	16.8	63	NE			2		9			0	0		Albert Senz.
Cassel	29.69	754.0	30.30	769.6	59.5	15.3	53	ESE			4		10			0	0	Foggy	Dr. H. Möhl.
Crefeld	30.01	762.2	30.17	766.3	60.8	16.0	64	N			2		9			0	0		Director Lose.
Emden	30.21	767.4	30.25	768.3	58.6	14.8	68	E			1		8			0	0		Prof. Prestel.
Frankfort on the Main	29.84	758.0	30.21	767.3	61.3	16.3	50	N			1		2			0	0		Physical Society.
Friedrichshafen	28.72	729.4	30.17	766.3	50.4	10.2	90	SSW			3		0			0	0	Foggy	M. Wilhelm.
Hamburg	30.21	767.4	30.28	769.2	55.0	12.8	73	ESE			3		8c;k			0	0	Pleasant	Captain F. Hegemann.
Kiel	30.26	768.5	30.27	768.9	55.0	12.8	71	E			2		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.22	767.6	30.29	769.4	50.9	10.5	49	N											Prof. E. Luther.
Köslin			30.31	769.8	55.2	12.9							0			0	0		H. Müller.
Leipsic, Observatory	29.87	758.7	30.30	769.5	57.6	14.2	41	E			3		9	ENE		0	0		Prof. Bruhns.
Memel, Naval School	30.24	768.2	30.29	769.4	48.7	9.3	45	NW			4		1ck						Reinbrechtvon Skalweit.
Neufahrwasser	30.33	770.4	30.35	770.8	51.4	10.8	60	NNE			3		1			0	0		A. Lothes.
Posen	30.04	763.0	30.33	770.4	57.0	13.9	58	N			3–4		2						Dr. Magener.
Strassburg Obs., (in Alsace)	29.60	751.8	30.15	765.9	53.6	12.0	82	N			1		2			0	0		Dr. Schur.
Stuttgart	29.17	740.8	30.10	764.6	61.7	16.5	60	NE			1		2	S		0	0	Foggy	Prof. Schoder.
Treves, (Trier)	29.48	748.9	30.01	762.2	62.6	17.0	63	NE			2		1			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.64	727.4	30.15	765.8	59.9	15.5	48	ENE			1		3	NE		0	0	Foggy	Dr. Von Bebber.
Wustrow, Naval School	30.34	770.6	30.37	771.4	54.7	12.6	77	E			2		10						E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.73	755.1	30.11	764.8	73.0	22.8		NW										Cloudy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.76	755.9	29.81	757.2	84.1	28.9	75	WSW	27.0?	12.1?			0			0	0	Blue sky	
Deesa																			
Bombay	29.82	757.4	29.86	758.3	85.9	29.9	85	NW	7.0	3.1			10		SE	0.84	21.3	Thunder	
Poona	27.82	706.6	29.83	757.7	74.0	23.3	86	S					10		SE	0.54	13.7	Thunder-storm	
Lahore	29.00	736.6	29.72	754.9	93.9	34.4	26	E	1.2	0.5			0			0	0	Blue sky	
Belgaum	27.34	694.4	29.88	758.9	75.1	23.9	91	W	6.0	2.7			10	E	W;SE	0.21	5.3	Overcast	
Bangalore																			
Roorkee	28.84	732.6	29.72	754.8	93.8	34.3	25	NW	1.9	0.8						0	0		
Agra	29.14	740.2	29.69	754.0	96.7	35.9	20	W								0	0		
Trichinopoly																			
Nagpur	28.80	731.4	29.84	757.9	81.1	27.3	71	Calm	2.5	1.1			8			0	0	Gloomy	
Madras																			
Lucknow	29.35	745.5	29.71	754.6	94.8	34.9	26	NW	1.7	0.8						0	0	Blue sky	
Allahabad	29.40	746.7	29.70	754.4	93.7	34.3	37	Calm	2.3	1.0			0			0	0	Blue sky	
Patna	29.57	751.1	29.75	755.6	90.3	32.4	47	W	1.8	0.8			2	W	W	0	0		
Hazaribagh	27.81	706.4	29.81	757.2	81.0	27.2	77	SSW	8.0	3.6			0			0	0	Blue sky	
Cuttack	29.80	757.0	29.89	759.1	84.9	29.4	75	S	5.7	2.6			4			0	0	D. clouds	
Calcutta (Alipore)	29.84	757.8	29.86	758.4	82.7	28.2	87	SSW	5.0	2.2			0			0	0	Blue sky	
Goalpara	29.40	746.9	29.80	756.8	78.7	25.9	86	S	1.9	0.8			0			0.71	18.0	Blue sky	
Chittagong	29.83	757.6	29.92	759.9	83.1	28.4	85	SW	9.5	4.2						0	0	Gloomy	
Sibsagar	29.54	750.3	29.88	758.9	75.5	24.2	96	ENE	4.0	1.8			10	NW	NW	0.06	1.5	Gloomy	
Rangoon																			
Jubbulpore	28.47	723.2	29.82	757.5	84.7	29.3	67	SW	3.3	1.5						0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.32	567.0	30.12	765.0	43.2	6.2	72	ENE			1		0			0	0		Ab. Dom. Morgini.
Stelvio	22.29	566.2	30.13	765.2	42.4	5.8		WNW			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.72	754.8	30.13	765.2	63.7	17.6	39	SE	0.7	0.3			0			0	0		Prof. Giovanni Clodig.
Padua	30.02	762.5	30.05	763.3	63.7	17.6	48	NE	2.5	1.1			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.93	760.2	30.12	765.1	65.5	18.6	44	S	0.7	0.3			0			0	0		Conte Alm. Da Schio.
Verona	29.91	759.8	30.13	765.4	71.1	21.7	46	S			1		0			0	0		Dott. B. Bertoncelli.
Bergamo	28.82	731.9	30.10	764.4	63.8	17.4	55	S			1		0			0	0		Prof. Trionfini Carlo.
Domodossola	29.08	738.6	30.10	764.5	63.1	17.3	55	S			6		3			0	0		Prof. Giuseppe Calza.
Milan	29.63	752.5	30.14	765.6	59.7	15.4	54	S			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.79	756.7	30.14	765.5	63.0	17.2	45	NE			2		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.22	742.3	30.13	765.3	63.0	17.2	41	ESE	1.8	0.8			0			0	0		Prof. P. F. Denza.
Mondovi	28.22	716.9	30.13	765.2	60.1	15.6	32	N			4		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.91	759.6	30.13	765.2	64.9	18.3	48	E			6		0			0	0		Prof. L. Vassallo.
Genoa	29.96	761.0	30.13	765.3	68.0	20.0	47	SW	3.8	1.7			0			0	0		Prof. G. M. Garibaldi
Piacenza	29.80	759.3	30.15	765.7	64.6	18.1	38	NW	2.5	1.1			0			0	0		Dott. G. Manzi.
Parma	29.82	757.5	30.13	765.4	66.7	19.3	42	ESE			4		0			0	0		Prof. P. Pigorini.
Florence	29.88	758.9	30.13	765.4	66.7	19.3	32	NE			2		0			0	0		Cav. F. Meucci.
Leghorn	30.04	762.9	30.12	765.0	67.6	19.8	26	ENE	5.6	2.5			0			0	0		Prof. P. Monte.
Siena	28.92	734.5	30.12	765.0	63.3	17.4	40	SE	0	0			0			0	0		Prof. L. Toscani.
Urbino	28.61	726.7	30.16	766.0	58.3	14.6	61	NE			2		5			0	0		Prof. P. Serpieri.
Pesaro	30.11	764.7	30.15	765.9	61.7	16.5	69	N	23.0	10.3			0			0	0		Prof. Luigi Guidi.
Ancona	30.02	762.4	30.12	765.1	64.8	18.2	50	ENE			4		3			0	0		Prof. F. DeBosis.
Grosseto	30.03	762.7	30.14	765.5	69.1	20.6	34	E			2		2	SE		0	0		Avv. P. Ponticelli.
Rome	29.92	759.9	30.09	764.3	69.8	21.0	46	W			6		0			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.94	760.5	30.14	765.5	69.4	20.8	76	SW			1		1			0	0		Prof. L. Palmieri.
Lecce	29.81	757.2	30.05	763.5	69.4	20.8	27	NNE	5.6	2.5			4	SE		0	0		Prof. C. De Giorgi.
Cosenza	29.24	742.6	30.11	764.7	69.1	20.6	74	SE	4.3	1.9			3	SW		0.016	0.4		Prof. F. D. Conti.
Cagliari	29.78	756.3	29.96	761.0	70.7	21.5	58	W			2		9	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.96	761.0	30.01	762.2	70.5	21.4	83	NW			4		9	NE		0.157	4.0		Prof. F. Cafiero.
Palermo	29.75	755.7	30.00	762.0	72.1	22.3	64	NE	5.6	2.5			4			0	0		Prof. G. Cacciatore.
Caltanissetta	28.10	713.7	29.97	761.2	71.8	22.1	57	E			4		5	NE		0.047	1.2		Prof. A. Pagani.
Syracuse	29.92	760.0	30.00	761.9	75.6	24.2	66	E			4		9	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.57	751.1	30.13	765.2	68.5	20.3	73	ENE	1.3	0.6			2	NW		0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.89	759.2	29.99	761.6	61.2	16.2	91	NNW	2	0.9		1c				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.08	586.2	30.10	764.6	49.6	9.8	77	NW	0.2	0.08		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.18	766.6	30.18	766.6	60.4	15.8		E			5					0	0		
Groningen	30.20	767.1	30.26	768.5	56.7	13.7		E			1					0	0		
Helder	30.21	767.4	30.21	767.4	56.3	13.5		ENE			2					0	0		
Utrecht	30.15	765.9	30.20	767.1	60.8	16.0	56	E			4		5			0	0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.24	768.1	30.30	769.5	48.6	9.2	68	NNW	5.4	2.4			1			0	0		
Brönö	30.15	765.9	30.19	766.9	40.3	4 6	68	N	9	4			8					Light rain	
Christiania			30.30	769.5	58.1	14.5	30	NE	0	0			2			0	0		
Tromsö	29.81	757.1	29.85	758 2	33.8	1.0	96	Calm	0	0			10			0.760	19.3	Snowing	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.08	764.1	30.27	768.9	65.1	18.4	86	S	4.3	1.9			7			0	0		Dr. J. A. Sampaio
Campo Major	29.10	739.0	30.11	764.7	67.1	19.5	61	WSW	4.9	2.2			6	WNW		0.236	6.0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.17	766.4	30.26	768.6	73.6	23.1	55	SW	2.5	1.1			10			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.76	755.9	30.12	765.0	65.3	18.5	78	NNW	15.0	6.7			10			0.063	1.6		The Staff.
Ponta Delgada, (Azores)	30.23	767.9	30.30	769.7	68.5	20.3	62	SSE	6.3	2.8			3			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India, N 38° 25′, W. 9° 43′			30.14	765.6	67.6	19.8	78	NNW			5		9		NNW	6	NW	Showery	A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.82	757.5	30.25	768.3	55.9	13.3	36	NNW	9	4			0						Astronomical Obs.
Wilna	29.76	755.9	30.19	766.7	48.9	9.4	55	NW	11	5			8						Astronomical Obs.
Dorpat	29.80	757.0	30.05	763.3	43.5	6.4	40	NNW	11	5			7						Physical Cabinet.
St. Petersburg	29.80	756.9	29.82	757.3	40.1	4.5	42	NW	22	10			9						Central Physical Obs.
Kuopio	29.50	749.4	29.84	757.8	38.8	3.8	87	NW	34	15			5						Ch. Forsten.
Kieff	29.39	746.4	30.02	762.6	49.1	9.5	84	NW	11	5			3						Physical Cabinet.
Nikolaiev	30.07	763.7	30.14	765.5	60.4	15.8	56	N	9	4			10						Kurdakof.
Kertch	30.15	765.8	30.17	766.3	68.4	20.2	52	SW	4	2			3						Lagorio.
Moscow	29.09	738.9	29.65	753.1	37.8	3.2	87	N	13	6			7						Meteorological Obs.
Lugan	29.70	754.3	29.90	759.5	51.3	10.7	79	WSW	31	14			9			Blank	Blank		Meteorological Obs.
Archangel	29.15	740.3	29.17	740.8	34.2	1.2	85	NW	49	22			10						Ogorodnikof.
Tiflis	28.76	730.4	30.15	765.7	67.6	19.8	32	NW	4	2			1						Physical Observatory.
Astrakhan	30.12	765.1	30.04	763.0	60.6	15.9	42	WSW	18	8			5						Sebastianof.
Kasan	29.07	738.3	29.34	745.1	46.6	8.1	57	SW	4	2			4						Physical Cabinet.
Orenburg	29.94	760.5	30.33	770.3	39.0	3.9	75	E	13	6			3						Tschernischef.
Ekaterinburg	28.44	722.3	29.38	746.3	41.7	5.4	78	SSW	4	2			10						Meteorological Obs.
Nukuss	29.85	758.2	30.09	764.2	55.2	12.9	65	NNE	7	3			10						
Kasaly																			Bobrof.
Tashkend	28.31	719.1	29.97	761.2	68.4	20.2	89	Calm	0	0			0						Michelson.
Barnaul	29.60	751.9	30.13	765.4	43.3	6.3	72	Calm	0	0			9						Meteorological Obs.
Yeniseisk	29.70	754.4	29.85	758.1	41.7	5.4	95	S	2	1			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.89	759.1	30.03	762.7	60.6	15.9	51	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock	29.71	754.7	29.75	755.7	49.3	9.6	98	NW	16	7			10n					Thunder-storm	
Nikolaievsk, on the Amoor					53.1	11.7	98	SE	16	7			10						

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.84	707.1			62.8	17.0	78	S	3.7	1.67		0	10			1.130	28.7	Almost cov'd	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.75	755.6	29.83	757.6	77.2	25.1	88	SE	11.9	5.3			10n			0.378	9.6	Stormy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.02	762.6	30.12	765.1	69.8	21.0	76	WNW	21.1	9.4		0	7		SW	0.354	9.0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.86	758.4	81.7	27.6	82	S	0	0		3s	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.49	749.1	29.53	750.1	40.3	4.6	38	NW			6		1			0	0		
Umea	30.00	762.0	30.05	763.3	44.2	6.8	41	NNW			6		3			0	0		
Hernosand	30.09	764.3	30.14	765.6	46.0	7.8	57	WNW			6		6			0	0		
Stockholm	30.06	763.4	30.23	767.9	46.6	8.1	77	WNW			4		5			0	0		
Wisby	30.21	767.2	30.26	768.7	46.0	7.8	52	N			6		3			0.024	0.6		
Sub-Series.																			
Upsala	30.17	766.2	30.24	768.1	47.5	8.6	46	NW	9.8	4.4			5			0.001	0.02		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	25.69	728.8	30.10	764.6	59.5	15.3	60	N			1		0			0	0	Clear	The Observatory.
Zurich	28.50	724.0	30.13	765.4	56.8	13.8	74	W			1		0			0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +2.3 mm; Thermometer, —0.6 cent.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.19	766.7	66.6	19.2	50	NE	9	4.0			6		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.21	767.2	68.9	20.5		NW			3		5						B. Stefanidès.
Valona			30.14	765.5	72.3	22.4		W			1		2			0	0	Slightly cl'dy	A. Bertrand.
Varna			30.04	763.0	66.2	19.0		NW			2		0						Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.95	760.8	91.0	32.8	66	SW			3		1s		SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			30.09	764.3	66	18.9		E	1	0.4		0	0			0	0	Clear	W. R. Bigg.
*Chatham, N. B.			30.17	766.3	43	6.1	83	SW	2	0.9		0	0			0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.			30.19	766.8	51	10.6	62	NW	8	3.6		0	0			0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.88	758.9	30.07	763.8	56.2	13.4	92	Calm			0		10s			0	0	Dull	James Smith, M. A.
Dalhousie, N. B.																			H. A. Johnson.
Esquimault, B. C.	29.95	760.7	30.00	762.0	46.3	7.9	100	Calm				9cs	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.11	764.8	41	5.0	83	SW	9	4.0		5c	0	NW		0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.18	766.6	30.24	768.1	41.1	5.1	91	NW	1	0.4			Fog			0	0	Foggy	Prof. Harrison.
*Fort Garry, Manitoba			29.93	760.2	42	5.6	98	N	5	2.2		5k	5ks	N	N	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.28	743.7	30.04	763.0	70.4	21.3	87	S			3	0	0			0	0	Clear	H. J. Strang, M. A
Granton, Ontario	28.99	736.3	30.07	763.8	60	15.6	100	S			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S.			30.16	766.1	50	10.0	79	N	3	1.3		0	0			0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.75	755.6	30.11	764.8	60.5	15.8	85	W			1	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.90	759.4	29.92	760.0	40	4.4	51	NW			5	3k	4s	NW		0.17	4.3	Cloudy	E. Weedon.
*Kingston, Ontario			30.13	765.3	64	17.8	80	S	7	3.1		Haze	0			0	0	Clear	S. Woods, M. A.
*Montreal, Quebec	29.91	759.7	30.11	764.8	54	12.2	84	SW	10	4.5		0	2ks			0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario			30.00	762.0	59	15.0	94	SE	7	3.1		0	0			0	0	Clear	Rev. R. Mosley
Peterboro, Ontario	29.34	745.2	30.08	764.0	56.7	13.7	90	Calm			0		10			0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario			30.09	764.3	62	16.7	100	Calm	0	0		Haze	Haze			0	0	Hazy	H. Morgan.
Port Hastings, N. S.																			Peter Grant.
Port Stanley, Ontario			30.09	764.3	54	12.2	99	SE	1	0.4		0	Fog			0	0	Foggy	M. Payne.
*Quebec, Quebec			30.17	766.3	52	11.1	81	S	1	0.4		0	0			0	0	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario			30.00	762.0	56	13.3	78	E	8	3.6		0	0			0	0	Clear	W. H. McIntyre.
St. John, N. B.	30.09	764.3	30.26	768.6	46	7.8	84	NE	1	0.4		0	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario			29.99	761.7	67	19.4	88	S	4	1.8		0	0			0	0	Clear	K. Stewart.
Stayner, Ontario																			R. J. Cole.
Stratford, Ontario	28.80	731.5	30.05	763.3	60.0	15.6	96	SW	5	2.2		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B.			30.13	765.3	47	8.3	62	NW	8	3.6		0	8ks		NW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.72	754.9	30.10	764.5	59	15.0	93	Calm	0	0		0	Haze		Calm	0	0	Clear	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					43.0	6.1	83	N				10k	10s;n			0.16	4.1	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.98	761.5	30.21	767.3	54	12.2	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Alpena, Michigan	29.29	744.0	29.92	760.0	63	17.2	88	SE	2	0.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Atlantic City, New Jersey	30.14	765.5	30.16	766.1	66	18.9	98	E	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	29.86	758.4	30.04	763.0	70	21.1	70	N	5	2.2	.....	0	0	.....	.....	0	0	Clear.	
Baltimore, Maryland	30.14	765.5	30.19	766.8	62	16.7	77	N	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Clear	
Barnegat, New Jersey	30.15	765.8	30.17	766.3	67	19.4	64	E	20	8.9	.....	0	0	.....	.....	0	0	Clear.	
Bismarck, Dakota	28.18	715.8	29.86	758.4	43	6.1	58	N	18	8.0	.....	.....	10s	.....	N	0	0	Cloudy	
Boise City, Idaho	27.17	690.1	29.85	758.2	33	0.6	69	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.07	763.8	30.23	767.8	53	11.7	66	NW	4	1.8	.....	0	Sm'e	.....	.....	0	0	Clear.	
Brackettville, Texas	28.77	730.7	29.76	755.9	71	21.7	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Breckenridge, Minnesota	28.76	730.5	29.74	755.4	48	8.9	71	N	27	12.1	.....	0	8ks	.....	N	0	0	Cloudy	
Brownsville, Texas	29.82	757.4	29.89	759.2	68	20.0	94	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.38	746.2	30.07	763.8	66	18.9	78	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.89	759.2	30.15	765.8	61	16.1	88	S	4	1.8	.....	0	5ks	.....	NW	0	0	Fair	
Cairo, Illinois	29.67	753.6	30.05	763.3	69	20.6	84	Calm	0	0	.....	1cs	0	Calm	.....	0	0	Clear.	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.75	679.4	30.24	768.1	56	13.3	69	Calm	.....	.....	.....	0	0	.....	.....	0.02	0.5	Clear	
Campo, California	27.31	693.7	29.88	758.9	45	7.2	60	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.89	759.2	29.90	759.4	70	21.1	84	NE	32	14.3	.....	0	2s	.....	NE	2.06	52.3	Fair	
Cape Henry, Virginia	30.04	763.0	30.07	763.8	69	20.6	79	NE	32	14.3	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
Cape Lookout, N. Carolina	29.94	760.5	29.96	761.0	71	21.7	80	NE	40	17.9	.....	.....	10ks	.....	NE	2.31	58.7	Cloudy	
Cape May, New Jersey	30.12	765.0	30.15	765.8	63	17.2	83	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear.	
Charleston, South Carolina	29.95	760.7	30.02	762.5	69	20.6	79	NE	14	6.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Cheyenne, Wyoming	24.02	610.1	29.96	761.0	34	1.1	90	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.29	744.0	29.95	760.7	68	20.0	79	SW	8	3.6	.....	0	Fog	.....	Calm	0	0	Clear	
Cincinnati, Ohio	29.38	746.2	30.02	762.5	63	17.2	83	SE	1	0.4	.....	0	Fog	.....	SE	0	0	Clear	
Cleveland, Ohio	29.40	746.7	30.11	764.8	63	17.2	78	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear.	
Concho, Texas	28.02	711.7	29.33	745.0	60	15.6	70	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.48	748.8	29.94	760.5	67	19.4	64	SE	1	0.4	.....	2cs	0	W	.....	0	0	Fair	
Davenport, Iowa	29.31	744.5	29.92	760.0	68	20.0	84	S	1	0.4	.....	4c	0	SW	.....	0	0	Clear.	
Denison, Texas	29.16	740.7	29.93	760.2	70	21.1	84	SE	5	2.2	.....	2ck	0	Calm	.....	0	0	Fair	
Denver, Colorado	24.68	626.9	29.90	759.4	52	11.1	35	S	6	2.7	.....	0	0	.....	.....	0	0	Clear.	
Detroit, Michigan	29.38	746.2	30.03	762.7	64	17.8	88	SW	5	2.2	.....	0	Fog	.....	Calm	0	0	Clear	
Dodge City, Kansas	27.10	690.6	29.36	745.7	65	18.3	68	S	16	7.2	.....	2ck	5s	S	S	0	0	Fair	
Dubuque, Iowa	29.20	741.7	29.87	758.7	68	20.0	84	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
Duluth, Minnesota	28.94	735.1	29.59	751.6	58	14.4	93	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Hazy	
Eagle Pass, Texas	29.12	739.6	29.84	757.9	70	21.1	70	Calm	0	0	.....	5ck	0	Calm	.....	0	0	Fair	
Eastport, Maine	30.11	764.8	30.18	766.6	52	11.1	73	NW	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Erie, Pennsylvania	29.38	746.2	30.07	763.8	67	19.4	74	S	12	5.4	.....	0	Haze	.....	.....	0	0	Clear	
Escanaba, Michigan	29.20	741.7	29.82	757.4	63	17.2	89	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.30	718.8	29.90	759.4	74	23.3	59	E	.....	.....	.....	5k	0	E	.....	0.02	0.5	Fair	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	51	10.6	79	NW	3	1.3	.....	0	0	.....	.....	0.07	1.8	Clear.	
Fort Craig, New Mexico	25.50	647.7	.....	.....	56	13.3	81	W	2	0.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Fort Gibson, Indian Ter	29.38	746.2	29.90	759.4	71	21.7	80	SE	5	2.2	.....	5cs	2s	W	Calm	0	0	Fair	
Fort Griffin, Texas	28.64	727.4	29.88	758.9	69	20.6	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.79	731.3	29.75	755.6	69	20.6	79	SE	6	2.7	.....	2cs	0	W	.....	0	0	Clear.	
Fort Sully, Dakota	28.26	718.3	29.94	760.5	45	7.2	60	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear.	
Galveston, Texas	29.86	758.4	29.90	759.4	77	25.0	95	E	4	1.8	.....	2k	0	SE	.....	0	0	Fair	
Grand Haven, Michigan	29.32	744.7	29.95	760.7	69	20.6	84	S	17	7.6	.....	1c	0	Calm	.....	0	0	Clear	
Indianapolis, Indiana	29.27	743.4	30.04	763.0	63	17.2	33	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Indianola, Texas	29.88	758.9	29.91	759.7	76	24.4	86	NE	15	6.7	.....	0	2s	.....	Calm	0	0	Clear	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	29.93	760.2	29.96	761.0	71	21.7	80	N	6	2.7	.....	10cs	0	NW	.....	0	0	Cloudy	
Keokuk, Iowa	29.29	744.0	29.88	758.9	69	20.6	84	S	6	2.7	.....	1ck	4s	Calm	Calm	0	0	Fair	
Key West, Florida	29.79	756.7	29.82	757.4	81.0	27.2	80	SE	9	4.0	.....	.....	10s	.....	SE	0.80	20.3	Cloudy	
Kittyhawk, North Carolina	30.01	762.2	30.03	762.7	69	20.6	95	NE	40	17.9	.....	0	2ks	.....	NE	0	0	Fair	
Knoxville, Tennessee	29.12	739.6	30.11	764.8	62	16.7	88	SE	2	0.9	.....	0	Sm'e	.....	.....	0	0	Smoky	
La Crosse, Wisconsin	29.06	738.1	29.76	755.9	69	20.6	79	S	9	4.0	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	61	16.1	45	Calm	0	0	.....	0	5s	.....	SW	0.27	6.9	Fair	
Laredo, Texas	.....	.....	.....	.....	71	21.7	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Leavenworth, Kansas	29.02	737.1	29.83	757.7	68	20.0	84	S	6	2.7	.....	2k	0	Calm	.....	0	0	Clear.	
Los Angeles, California	29.50	749.3	29.83	757.7	55	12.8	87	N	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	
Louisville, Kentucky	29.51	749.5	30.06	763.5	65	18.3	94	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Lynchburg, Virginia	29.48	748.8	30.14	765.5	68	20.0	74	Calm	0	0	.....	5k	0	NW	.....	0	0	Fair	
Maricopa Wells, Arizona	.....	.....	.....	.....	61	16.1	88	N	.....	.....	.....	0	2s	.....	E	Inap.	Inap.	Clear	
Marquette, Michigan	29.02	737.1	29.68	753.9	67	19.4	74	S	6	2.7	.....	0	0	.....	.....	0	0	Clear.	
Mason, Texas	28.32	719.3	30.03	762.7	66	18.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Memphis, Tennessee	29.72	754.9	30.03	762.7	68	20.0	90	Calm	0	0	.....	2c	Fog	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.28	743.7	29.94	760.5	66	18.9	84	SW	8	3.6	.....	0	Sm'e	.....	SW	0	0	Clear	
Mobile, Alabama	29.93	760.2	29.97	761.2	69	20.6	90	E	6	2.7	.....	0	0	.....	.....	0	0	Clear.	
Montgomery, Alabama	29.81	757.2	30.04	763.0	67.5	19.7	84	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
Morgantown, West Virginia	29.10	739.1	30.14	765.5	61	16.1	82	Calm	0	0	.....	0	Fog	.....	.....	0	0	Foggy	
Mt. Washington, N. H.	23.99	609.3	30.35	770.9	40	4.4	33	NW	20	8.9	.....	0	2s	.....	NW	0	0	Clear	
Nashville, Tennessee	29.54	750.3	30.07	763.8	65	18.3	89	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.09	764.3	30.21	767.3	59	15.0	70	Calm	0	0	.....	Haze	Haze	Calm	Calm	0	0	Clear.	
New London, Connecticut	30.17	766.3	30.22	767.6	57	13.9	69	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	29.86	758.4	29.91	759.7	75	23.9	68	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear.	
Newport, Rhode Island	30.16	766.1	30.21	767.3	56	13.3	81	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
New York, New York	30.04	763.0	30.21	767.3	63	17.2	72	NE	8	3.6	.....	0	Fog	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.05	763.3	30.11	764.8	67	19.4	84	NE	15	6.7	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
North Platte, Nebraska	26.94	684.3	29.47	748.5	48	8.9	48	N	20	8.9	.....	0	0	.....	.....	0	0	Clear.	
Olympia, Washington Ter.	29.97	761.2	30.01	762.2	36	2.2	90	Calm	0	0	.....	0	0	.....	.....	0.24	6.1	Clear.	
Omaha, Nebraska	28.63	727.2	29.65	753.1	68	20.0	84	S	12	5.4	.....	2k	0	S	.....	0	0	Clear.	
Oswego, New York	29.80	756.9	30.12	765.0	60	15.6	76	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pembina, Dakota	29.09	738.9	29.92	760.0	42.5	5.8	83	NW	12	5.4	.....	.....	10ks	.....	NW	0	0	Cloudy	
Philadelphia, Pennsylvania	30.14	765.5	30.19	766.8	59	15.0	88	NE	12	5.4	.....	0	Haze	.....	.....	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	64	17.8	72	Calm	.....	.....	.....	2k	0	SW	.....	Inap.	Inap.	Clear.	
Pike's Peak, Colorado	17.88	454.1	30.09	764.3	33	0.6	69	SE	16	7.2	.....	5k	0	SE	.....	0	0	Fair	
Pioche, Nevada	23.98	609.1	29.75	755.6	56	13.3	40	S	9	4.0	.....	0	0	.....	.....	0	0	Clear.	
Pittsburg, Pennsylvania	29.32	744.7	30.13	765.3	56	13.3	93	N	1	0.4	.....	0	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.37	746.0	30.01	762.2	64	17.8	89	S	5	2.2	.....	0	Sm'e	.....	.....	0	0	Clear	
Portland, Maine	30.16	766.1	30.21	767.3	53	11.7	79	NW	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Portland, Oregon	30.00	762.0	30.10	764.5	44	6.7	100	NE	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
Prescott, Arizona	.....	.....	.....	.....	50	10.0	71	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.87	758.7	29.88	758.9	77	25.0	77	NE	14	6.3	.....	8cs	0	E	.....	Inap.	Inap.	Cloudy	
Red Bluff, California	29.50	749.3	29.86	758.4	55	12.8	58	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.48	748.8	30.08	764.0	61	16.1	66	SW	9	4.0	.....	2k	Haze	W	Calm	0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.07	763.8	37	2.8	100	Calm	0	0			Fog		Calm	0.05	1.3	Foggy	
Sacramento, California	29.77	756.1	29.86	758.4	53	11.7	66	S	3	1.3		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.45	748.0	30.01	762.2	67	19.4	80	S	6	2.7		0	5s		Calm	0	0	Fair	
St. Marks, Florida	29.95	760.7	29.97	761.2	68	20.0	79	E	9	4.0		10cs	0	Calm		0	0	Cloudy	
St. Paul, Minnesota	28.83	732.3	29.61	752.1	68	20.0	79	S	12	5.4		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.57	649.5	29.90	759.4	51	10.6	50	NE	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.23	742.4	29.80	756.9	68	20.0	90	NE	2	0.9		0	0			0	0	Clear	
San Diego, California	29.79	756.7	29.85	758.2	63	17.2	94	Calm	0	0			Fog			0	0	Foggy	
Sandusky, Ohio	29.43	747.5	30.08	764.0	68	20.0	69	SW	6	2.7		0	Sm'e		Calm	0	0	Smoky	
Sandy Hook, New Jersey	30.18	766.6	30.20	767.1	62	16.7	83	NE	15	6.7		0	0			0.07	1.8	Clear	
San Francisco, California	29.84	757.9	29.90	759.4	52	11.1	79	W	8	3.6		0	0			0	0	Clear	
Santa Fé, New Mexico	23.36	593.3	29.80	756.9	50	10.0	59	Calm	0	0		Haze	5s		SW	0	0	Fair	
Savannah, Georgia	29.94	760.5	30.03	762.7	67	19.4	79	NE	7	3.1			10s		NE	0	0	Cloudy	
Shreveport, Louisiana	29.75	755.6	29.96	761.0	74	23.3	81	Calm	0	0		0	0			0	0	Clear	
Smithville, North Carolina	29.97	761.2	30.00	762.0	69	20.6	79	N	15	6.7			10ks		N	0	0	Cloudy	
Springfield, Massachusetts	30.02	762.5	30.15	765.8	58	14.4	69	Calm	0	0		0	0			0	0	Clear	
Stanwix, Arizona					66	18.9	64	Calm				0	0			0	0	Clear	
Stockton, Texas					64	17.8	62	S	8	3.6		5cs	0	SE		0	0	Fair	
Thatcher's Island, Mass	30.16	766.1	30.22	767.6	55	12.8	87	NW	4	1.8		0	0			0	0	Clear	
Toledo, Ohio	29.41	747.0	30.06	763.5	66	18.9	84	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Tucson, Arizona	27.48	698.0	30.02	762.5	68	20.0	64	SE				0	2s		Calm	Inap.	Inap.	Fair	
Tybee Island, Georgia	29.97	761.2	30.00	762.0	70	21.1	79	NE	22	9.8			10s		Calm	0	0	Cloudy	
Umatilla, Oregon	29.75	755.6	30.27	768.8	35	1.7	80	SE	6	2.7		0	0			0	0	Clear	
Vicksburg, Mississippi	29.75	755.6	30.00	762.0	71	21.7	80	E	6	2.7		0	0			0	0	Clear	
Virginia City, Montana	24.21	614.9	29.69	754.1	28	— 2.2	88	NW	6	2.7			10s		NW	0.66	16.8	Cloudy	
Visalia, California	29.48	748.8	29.84	757.9	56	13.3	62	NW	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.08	764.0	30.20	767.1	62	16.7	83	NE	7	3.1		0	0			Inap.	Inap.	Clear	
Wickenburg, Arizona					60	15.6	13	S				5k	0	Calm		0	0	Fair	
Wilmington, N. Carolina	29.93	760.2	30.00	762.0	69	20.6	79	N	12	5.4			10s		N	0.03	0.8	Cloudy	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	37	2.8	46	E	13	5.8		0	0			0	0	Clear	
Wood's Holl, Mass	30.16	766.1	30.21	767.3	59	15.0	81	N	5	2.2		0	0			0	0	Clear	
Yankton, Dakota	28.42	721.9	29.63	752.6	67	19.4	84	SW	6	2.7		0	5s		W	0	0	Fair	
Yuma, Arizona	29.64	752.8	29.80	756.9	63	17.2	33	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.62	752.3	29.67	753.6	31.0	— 0.6	95	W	5	2.2		2ck	3s.	W	W	0.10	2.5	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.77	756.1	29.79	756.7	78	25.6	86	SE	10.8	4.8		8c	4n	SE	SE	0.45	11.4	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	81	27.2	78	Calm	0	0		8c	2s	Calm	E	0	0		James Gall.
Santiago de Cuba, W. I.	29.91	759.7	29.92	760.0	84	28.9	75	Calm	0	0		4ck	1ks	SE	S	0	0		T. W. Beattie.
Navassa, W. I.	29.82	757.4	29.90	759.4	84	28.9		E			2					0	0	Clear	F. M Everett.
St. Thomas, W. I.					87	30.6	79	Calm				2c	4ks	E		Blank	Blank		G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I	29.78	756.4	29.80	756.9	81	27.2	83	SE				0	2ks		SE			Clear	L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.02	762.5	84	28.9	75	E			2	4c	0	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1			67.0	19.4	80	Calm			0	8cs	2s			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.90	759.4	56	13.3	53	11.7	73	WSW	12	5.4			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.10	764.5			76	24.4	77	NE	13	5.8			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.25	768.3	67	19.4	52	11.7	73	NW			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	29.89	759.2	68	20.0	63	17.2	92	NNW			2		4s; hz		NW	0	0			Threatening	
Adams, Montevideo, Uraguay	30.20	767.1	68	20.0	52	11.1	79	N			2		10		N	Light	Light			D. clouds	
Alert, Hakodadi, Japan	30.11†	764.8†	64	17.8	64	17.8	78	E			3		7		E					Squally	
Alliance, Constantinople, Turkey.	30.37	771.4	69	20.6	68	20.0	65	NE			3		6		NE					Pleasant	
Ashuelot, Che-foo, China	30.13	765.3	72	22.2	62	16.7	32	NNW			4–6		2		N			Smooth		Squally	
Canonicus, New Orleans, La	29.94	760.5	53	11.7	73	22.8	95	ENE			3		1							Fair	
Colorado, New York, N. Y.	30.28	769.1	65	18.3	63	17.2	78	NNE	6	2.7			3		NNE	0	0			Light fog	
Despatch, Beikos Bay, Bosphorus	30.30	769.6	71	21.7	66	18.9	64	NE			3		8		NE			Smooth		Cloudy	
Essex,																					
Franklin, Norfolk, Va.	30.15	765.8	67	19.4	69	20.6	95	NE	14.4	6.4			6		NE	0	0			Cloudy	
Frolic, N. 12° 37′, W. 58° 47′	30.07	763.8	84	28.9	86	30.0	84	NW			1		3k		Calm	0	0	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.95‡	760.7‡			74	23.3	100	SSW			1		2		Calm	0	0			D. clouds	
Kearsarge, Singapore, India	29.94	760.5			82	27.8	91	NE			3		3		N&E	0	0	Smooth	S&W	Hazy	
Lackawana, Nanaimo, B. C.	30.02	762.5			49	9.4	78	Calm			0		9		NW			Smooth		D. clouds	
Marion, Smyrna, Turkey	30.07	763.8	73	22.8	73	22.8	72	W			4		6		W	0	0	Chop	W	D. clouds	
Monocacy, Hakodadi, Japan	29.94	760.5	64	17.8	63	17.2	83	E			2		4		SE	0	0	Smooth		D. clouds	
Monongahela, N. 38° 42′ ″22, W. 63° 49′.	30.10	764.5	71	21.7	71	21.7	66	NE			5–6		ck					Moderate.	N&E	D. clouds	
New Hampshire, Port Royal, S. C.	30.18	766.6			69	20.6	80	NNE	12	5.4			9		NE					D. clouds	
Omaha, S. 32° 35′, W. 74° 01′	30.14	765.5	61.5	16.4	58.5	14.7	85	SE	17	7.6			0			0	0	Light	S&E	Clear	
Ontario, Callao, Peru	30.02	762.5	70	21.1	68	20.0	90	SE			3		10					Long	W	D. clouds	
Osceola, New York, N. Y.	30.24	768.1	66	18.9	63	17.2	83	ENE			2		0							Foggy	
Palos, Poo-too Island, China	30.08	764.0	74	23.3	73	22.8	67	N			1–5		1		N	0	0	None		Squally	
Pensacola, Mare Island, Cal.	30.00	762.0			57	13.9	87	SW			2		0			0	0				
Plymouth, N. 38°45′15″, W. 74°06′26″	30.48	774.2	72	22.2	67	19.4	100	E			3		0					Moderate.	N&E	Clear	
Ranger, Nagasaki, Japan	30.00	762.0			73	22.8	76	SSW			1		0		Calm			Smooth		Cloudy	
Rio Bravo, Brownsville, Texas	29.81	757.2			70	21.1	95	NW			2		1		NW					Hazy	
Severn, Annapolis, Md.	30.26	768.6	68	20.0	64	17.8	89	NNE			3		1			0	0			Clear	
St. Louis, League Island, Pa	30.10	764.5	69	20.6	68	20.0	70	NE	6	2.7			0			0	0			Clear	
Tennessee, N. 41° 12′, E. 141° 31′ 30″.	29.95	760.7	71	21.7	67	19.4	74	SE	8	3.6			1		Calm	0	0	Long	S&E	D. clouds	
Trenton, Marseilles, France	30.24	768.1	70	21.1	67	19.4	64	SW	4	1.8			2		S&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	30.11	764.8	74	23.3	74	23.3	68	W			4		4		W					Hazy	
Wabash, Boston, Mass.	30.22	767.6	55	12.8	52	11.1	79	NW	4	1.8			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.39†	771.9†	69	20.6	69	20.6		N&E			1		0							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 40° 24′, E. 151° 22′			30.22*	767.6*	64	17.8	62	E			4		7		E	Small	E	D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 38° 10′, E. 146° 20′					72	22.2		E			4		7		ENE	Smooth	E	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 48° 22′, W. 18° 21′			29.79	756.7	69.0	20.6	80	SSE			2		10		S	Smooth	E	Drizzling	Capt. A. Jaeger.
S. S. Ohio, Baltimore, Md.			30.21	767.3	70.0	21.1	95	ENE			1							Blue sky	Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 50° 54′, W. 33° 27′			29.74*	755.4*	57	13.9	??	SSW			6		4		SW	Confused;	S to WSW	D. clouds	Captain Shackelford.
S. S. Indiana, N. 45° 14′, W. 60° 30′			30.08†	764.0†	61	16.1		NNW			6		5		NNW	Moderate.	WNW		Captain Sargent.
S. S. Ohio, N. 51° 30′, W. 10° 04′			30.06*	763.5*	60	15.6	91	ESE			8				ESE	None		Fair	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.94	760.5	71	21.7	80	NE	11	4.9		8ck	0	NE				Cloudy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 1, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.05	763.3	76.6	24.8	56	NNW			2		2			0	0	Fair	Michel.
Algiers			29.85	758.2	67.3	19.6	90	NW			1		8			1.284	32.6	Very cloudy	Peter.
La Calle			29.84	758.0	73.8	23.2	77	ENE			3		4			0.236	6.0	Cloudy	Fleury.
Tunis			29.91	759.6	75.2	24.0	75	E			4		2			0.051	1.3	Fair	Jacques.
Sfax			29.89	759.3	78.8	26.0		ENE			3		8			0.276	7.0	Very cloudy	Husson.
Saida			29.98	761.5	62.2	16.8		W			4		6			0.189	4.8	Cloudy	Millot.
Tebessa			29.88	758.9				NE			2		2			0	0	Fair	Bourgeois.
Geriville			29.94	760.4	68.4	20.2	49	W			3		10			0.118	3.0	Covered	Lemaillot.
Laghouat			29.98	761.4	68.0	20.0	64	W			4		4			0	0	Cloudy	François.
Biskra			29.93	760.3	77.2	25.1	25	NW			3		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 830? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.52	749.8	30.07	763.7	61.7	16.5	55	NE			2		8			0.106	2.7	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.45	747.9	30.21	767.2	56.5	13.6	56	NE			2		5			0	0		Dr. Wierzbiski.
Eperies	29.28	743.6	30.15	765.8	59.5	15.3	54	Calm			0		5s		NW	0	0		Julius Mikolik.
Gratz	28.89	733.7	30.14	765.5	56.3	13.5	74	SW			3		6			0	0		Andreas Rospini.
Hermannstadt	28.72	729.6	30.13	765.3	60.1	15.6	63	SSE			4		0			0	0		Prof. Reissenberger.
Kremsmünster	28.64	727.5	29.97	761.2	57.2	14.0	65	ENE			1		1			0	0		Prof. C. Wagner.
Lemberg	29.22	742.1	30.21	767.3	53.6	12.0	86	SE			1		6			0	0		Dr. T. Stanecki.
Pola	29.89	759.3	30.00	762.1	65.5	18.6	48	E			4		9ks			0	0		I.R.Hydrographic Office
Szathmar																			Johann Tamas, S. J.
Szegedin	29.84	758.0	30.12	765.0	61.9	16.6	56	Calm			0		5			0	0		Karl Staucel.
Trieste	29.94	760.5	30.04	763.1	64.0	17.8	57	E			1		9			0	0		P. Busin.
Vienna	29.40	746.7	30.09	764.2	61.3	16.3	80	S			2		7			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.56	725.3	30.05	763.2	60.1	15.6	66	ENE			1		7			0	0		
Brussels	29.89	759.3	30.10	764.4	57.7	14.3	60	NE			5		4		N	0.008	0.20		Royal Observatory.
Furnes	30.10	764.4	30.12	765.0	56.7	13.7	80	NW			2		10			0.283	7.2		
Maeseyck	29.96	761.0	30.09	764.3	55.6	13.1	83	NNE			2		0			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	30.08	764.0	30.18	766.6	56.0	13.3		SE	4	1.8			1			0	0	Blue sky	W. Boswell.
Ardrossan	30.18	766.6	30.20	767.1	56	13.3		Calm			0		4					Hazy	William McNeil.
Armagh, Observatory			30.22	767.6	56.3	13.5		E	3	1.3			5					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.19	766.8	58.4	14.7		ESE	4	1.8			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.20	767.1	64.7	18.2		Calm			0		2					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.81	757.2	30.20	767.1	56.3	13.5		NE			1		3			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	85.0	29.4		NE			1		2					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.18	766.6	58.0	14 4		N			1		10					Overcast	H. Todd.
Cardington			30.19	766.8	57.4	14.1		E			1		9					Overcast	John McLaren.
Chatham, School M. E	30.05	763.3	30.18	766.6	59.2	15.1		NE			1		8					Fine	Lt. W. G. Morris, R. E.
Dartmoor	28.72	729.5	30.18	766.6	60.0	15.6		NE			5		3					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.18	766.6	30.21	767.3	57	13.9		SE			2		10					Overcast	J. Mac Gowan.
Dover	30.12	765.0	30.15	765.8	57	13.9		NE			3		7					Gloomy	J. Costello.
Eccles, (near Manchester)			30.18	766.6	59.5	15.3		SE	0.8	0.4			9					Overcast	Thomas Mackereth.
Falmouth, Observatory	29.96	761.0	30.19	766.8	58.7	14.8		ENE			2		1					Hazy	The Staff.
Fort Napier, (Natal)	28.02	711.7	30.25	768.3	67.9	19.9		NE			4		8					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.94	760.5	82	27.8		N			1		4					D. clouds	
Galway, Queen's College					58	14.4		NE			1		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.98	761.5	30.02	762.5	70.0	21.1		NW			5		8					Overcast	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.99	761.7	30.19	766.8	52.1	11.2		NNE			3		6					D. clouds	D. G. Maclean.
Great Yarmouth	30.16	766.1	30.16	766.1	57	13.9		NE			2		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.00	762.0	30.17	766.3	60.3	15.7		N			1		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.92	760.0	30.14	765.5	61	16.1		NNE			2		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.16	766.1	62	16.7		E			4		2			0.34	8.6	D. clouds	M. P. Moyle.
Holyhead	30.14	765.5	30.19	766.8	59	15.0		SSW			1		3					D. clouds	John Tilston.
Jersey	29.87	758.7	30.16	766.1	64.5	18.1		NE			1		5					Gloomy	J. Fisher.
Kew, Observatory			30.17	766.3	58.8	14.9		NNE	7	3.1			8					Threatening	The Staff.
Kingstown	30.19	766.8	30.22	767.6	57	13.9		NE			2		8					Overcast	George Mitchell.
Leicester, Museum			30.21	767.3	55.9	13.3		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.69	754.1	29.76	755.9	78	25.6		W			2		4					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	30.08	764.0	30.16	766.1	54	12.2		Calm			0							Hazy	W. D. Penny.
Nassau, (Bahamas)			29.86	758.4	83.0	28.3		Calm			0		10			Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	30.01	762.2	30.20	767.1	61.3	16.3		NNE			2		8ck		NNE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.66	753.4	30.18	766.6	59.5	15.3		NNE			0–1		8					Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.18	766.6	56	13.3		N			1		2					Blue sky	F. Lucas
Plymouth	30.10	764.5	30.18	766.6	61.0	16.1		ESE			2		0					Blue sky	John Merrifield.
Roche's Point	30.15	765.8	30.21	767.3															W. Kennedy.
Saint Ann's Head	30.04	763.0	30.20	767.1	60	15.6		ESE			1		5					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			30.16	766.1	52	11.1		S	5	2.2			10					Hazy	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.10	764.5	70	21.1		NE			2		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.97	761.2	30.21	767.3	58.8	14.9		ESE			1		9			0	0	Misty	W. F. Cooper.
Silloth Rectory	30.16	766.1	30.19	766.8	59.3	15.2	60	Calm			0		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					55.8	13.2		E			0		8					Hazy	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)			30.12	765.0	56	13.3		WSW			2		2					Blue sky	John Smith.
Stratfield Turgiss	29.90	759.4	30.19	766.8	58.9	14.9		E			1		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.04	763.0	54	12.2		SSW			1		8					Overcast	John Trotter.
Truro, Royal Institution			30.16	766.1	68	20.0		E			2		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.19	766.8	63.1	17.3		SW	9	4.0			1					Hazy	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					59	15.0		E			1		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.97	761.2	30.01	762.2	73.3	22.9	63	NNW	9	4.0		1	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.98	761.5	43.9	6.1	81	SW			3		8n			0	0	Squally	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.21	767.3	58.2	14.6		W			1					0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.2	72.8	22.7	73	SSE	10.0	4.5			10		ESE			Drizzling	C. Meldrum.
Melbourne, Observatory	30.08	764.0	30.17	766.3	48.3	9.1	82	SW	16	7.2			7			0.06	1.5	Rain-squalls	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.14	765.5	57	13.9		SSW			4		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.15	765.8	49	9.4		S			4	7	5	W					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Algeria, N. 42° 32′, W. 59° 12′			30.28	769.1	56	13.3		W			1		2			0*		D. clouds	Capt. W. Watson.
S. S. Batavia, N. 49° 55′, W. 30° 45′			29.72	754.9	58	14.4		SW			5		9			8	wsw	Showery	Capt. J. E. Monland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 28′			29.64	752.8	58	14.4		WNW			5		6			6	SW	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 43° 0′, W. 49° 25′			30.29	769.4	53	11.7		SW			2		1			4	N	Blue sky	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.25	666.7			68.4	20.2	92	E			1	1c				0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.18	766.6	30.23	767.8	50.5	10.3	63	SE			2		9						
Fanöe	30.11	764.9	30.13	765.4	54.7	12.6	77	SE			4		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.69	754.1	29.73	755.2	47.3	8.5	99	SE			4		8						
Thorshavn, (Faröe)	30.01	762.2	30.04	763.1	52.7	11.5	89	Calm			0		10						
Vestervig	29.94	760.4	30.11	764.7	54.0	12.2	73	ESE			2		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.60	751.8	30.15	765.8	59.0	15	63	NE			2		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	29.93	760.3	30.04	763.1	59.7	15.4	78	WNW			2		1		W			Clear	Bonvarne, Director.
Avignon, Normal School	29.93	760.2	30.01	762.2	70.2	21.2	36	NW			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.48	748.9	30.04	763.1	63.3	17.4	56	ESE			2	2c				0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	29.93	760.1	30.08	764.0	67.8	19.9	52	N	2.0	0.9					NE	0	0		Albert Cheux.
Beauvais	29.84	757.9	30.12	765.1	59.4	15.2	60	ENE			2		1		NNE	0	0	Clear	Normal School.
Besançon	29.19	741.5	30.08	763.9	59.0	15	72	SE			2		0			6	0	Clear	Normal School.
Bourg-en-Bresse	29.15	740.4	30.07	763.8	65.3	18.5	54	NW			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.52	749.8	30.07	763.6	60.8	16	64	NW			1		2		NW	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.84	758.0	30.07	763.6	68.9	20.5	72	NW			1		5		Calm	0	0	Foggy	The Staff.
Carcassonne, Normal School	29.75	755.7	30.16	766.1	65.1	18.4	84	E			4		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.61	752.0	30.17	766.3	62.4	16.9	92	N			2		8		SE				Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.77	756.1	30.08	764.1	63.7	17.6	71	N			2		2k		SW	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.68	728.5	29.99	761.8	69.3	20.7	43	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.20	741.6	30.08	764.0	51.8	11	86	E			2		0			0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	28.91	734.3	30.05	763.3	72.0	22.2	26	E			2		5		E	0	0	¾ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.83	757.7	30.04	763.0	68.0	20	72	NW			2		5		NW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.81	757.1	30.11	764.9	62.4	16.9	64	NNE			2		2		NE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	740.0	30.04	763.0	61.3	16.3	75	NW			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.04	762.9	30.13	765.4	69.4	20.8	61	S			2		2		SE	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.34	745.3	29.98	761.6	61.5	16.4	89	NNE			6		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.97	735.8	30.01	762.3	56.5	13.6	66	NNE			1		2		NE	0	0	Slightly cl'dy	Normal School.
Nismes, Normal School	29.87	758.7	30.07	763.8	61.7	16.5	72	N			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.76	755.9	30.14	765.5	59.4	15.2	70	NW			2		0			0	0	Clear	Bernard, Director.
Paris, Observatory	29.85	758.2	30.09	764.3	58.8	14.9	68	NNE			2		0			0	0	Clear	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.04	762.9	30.07	763.7	71.6	22.0	43	ENE			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.02	762.6	30.11	764.8	64.8	18.2	55	NE			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	28.98	736.1	30.04	762.9	68.0	20	62	W			2		2		E	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.99	761.7	70.3	21.3	41	W			2		7			0	0	Partly cl'dy.	The Staff.
Mont-Louis	24.88	632.0	30.20	767.0	51.8	11.0	63	ESE	16.8	7.50			4		E	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.81	757.1	30.08	764.1	59.5	15.3	68	N			2-3	1c		SW		0	0	Clear	Marié Davy, Director.
Perpignan			30.02	762.5	64.4	18.0	60	SE	5.6	2.50			1		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.32	541.5			35.6	2.0		NE			2		10					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.56	573.0			36.5	2.5		NE			3		10			0.063	1.6	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.93	760.1	30.09	764.3	61.3	16.3	74	NNW			1		0			0	0		E. Renou.
Toulouse, Observatory	29.35	745.4	30.07	763.6	63.5	17.5	55	SE			1		1			0	0		The Staff.
Tours	29.95	760.6	30.14	765.6	67.3	19.6		NNW			1		4		S	0	0		C. Marquet.
Versailles, (near Paris)			30.10	764.5	61.9	16.6	72	NE			1		0			0.006	0.14	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.03	762.8	30.06	763.4	59.0	15.0	78	WSW	5.1	2.3			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.98	761.5	30.15	765.8	57.2	14.0	62	SE			1		6			0	0		Prof. Arndt.
Breslau	29.66	753.4	30.20	767.0	58.3	14.6	54	ESE			3		4			0	0		Royal University Obs'y.
Carlsruhe	29.61	752.0	30.04	762.9	56.5	13.6	77	ESE			1		0			0	0		Albert Senz.
Cassel	29.50	749.2	30.12	765.1	64.0	17.8	57	E			2		2	NE		0	0		Dr. H. Möhl.
Crefeld	29.90	759.5	30.07	763.6	55.4	13.0	77	NW			3		0			0	0		Director Lose.
Emden	30.07	763.8	30.11	764.7	58.3	14.6	71	NE			3		9			0	0		Prof. Prestel.
Frankfort on the Main	29.71	754.6	30.07	763.8	60.8	16.0	52	NE			1		0			0	0		Physical Society.
Friedrichshafen	28.63	727.1	30.07	763.7	52.9	11.6	86	NNW			3		10			0	0	Foggy	M. Wilhelm.
Hamburg	30.04	763.1	30.11	764.9	55.4	13.0	68	SE			4		8k;ck	SW		0	0	Fair	Captain F. Hegemann.
Kiel	30.12	765.1	30.14	765.5	54.3	12.4	72	E			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.23	767.8	30.30	769.6	50.7	10.4	49	SE										Fair	Prof. E. Luther.
Köslin			30.24	768.1	51.8	11.0		SE			4		0			0	0		H. Müller.
Leipsic, Observatory	29.71	754.6	30.13	765.2	59.5	15.3	58	ESE			3		3	ESE		0	0		Prof. Bruhns.
Memel, Naval School	30.31	769.8	30.35	771.0	49.1	9.5	55	W			1		1s						Reinbrechtvon Skalweit.
Neufahrwasser	30.32	770.2	30.34	770.6	50.0	10.0	57	E			2		8			0	0		A. Lothes.
Posen	29.96	761.0	30.25	768.3	56.5	13.6	70	S			6–7		9					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace)	29.52	749.9	30.08	764.0	52.7	11.5	87	Calm			0		10			0	0	Foggy	Dr. Schur.
Stuttgart	29.09	738.8	30.02	762.5	59.0	15.0	63	NE			1		2	E		0	0		Prof. Schoder.
Treves, (Trier)	29.41	746.9	29.93	760.1	60.6	15.9	63	NE			1		0			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.52	724.4	30.01	762.3	58.3	14.6	48	SE			2		2		SE	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.24	768.1	30.29	769.4	55.2	12.9	66	ESE			3		5					Fair	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.67	753.7	30.05	763.3	75.2	24.0		NE										½ Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.73	755.2	29.78	756.5	83.7	28.7	79	WSW	33.0?	14.8?			0			0	0	Blue sky	
Deesa	29.33	745.0	29.79	756.7	97.5	36.4	33	WSW					1	SE		0	0	Misty	
Bombay	29.78	756.3	29.81	757.2	78.7	25.9	91	SW	8.0	3.6			10	SSE	S			Raining	
Poona	27.81	706.4	29.81	757.2	78.0	25.6	82	NE					10		N	0.07	1.8	Lightning	
Lahore	28.97	735.8	29.70	754.2	90.1	32.3	35	Calm	1.2	0.5			0			0	0	Blue sky	
Belgaum	27.36	694.9	29.92	760.0	71.4	21.9	89	WSW	5.0	2.2			7	SE	WSW	0.05	1.3	D. clouds	
Bangalore																			
Roorkee	28.80	731.6	29.68	753.7	93.8	34.3	17	NW	3.2	1.4						0	0		
Agra	29.13	739.8	29.67	753.6	100.7	38.2	18	W								0	0		
Trichinopoly																			
Nagpur	28.76	730.4	29.79	756.6	86.8	30.4	56	E	2.5	1.1			7			0	0	D. clouds	
Madras																			
Lucknow	29.34	745.2	29.70	754.3	95.1	35.1	22	N	1.7	0.8						0	0	Blue sky	
Allahabad	29.38	746.2	29.68	754.0	89.1	31.7	41	Calm	2.7	1.2			0			0	0	Blue sky	
Patna	29.54	750.2	29.72	754.8	88.6	31.4	68	E	1.1	0.5			2	E	E	0	0		
Hazaribagh	27.78	705.7	29.78	756.5	80.3	26.8	55	NNE	8.9	4.0			4		N	0	0		
Cuttack	29.72	755.0	29.80	757.0	87.4	30.8	79	SSW	1.2	0.5			4			0	0	D. clouds	
Calcutta (Alipore)	29.80	756.9	29.82	757.5	83.9	28.8	87	SSW	6.0	2.7			1			0	0	Blue sky	
Goalpara	29.44	747.8	29.83	757.8	77.1	25.1	77	Calm	3.1	1.4			9		S	0.55	14.0	D. clouds	
Chittagong	29.81	757.1	29.90	759.5	74.1	23.4	93	ENE	2.0	0.9			10			0	0	Gloomy	
Sibsagar	29.55	750.5	29.89	759.1	76.1	24.5	85	ENE	3.7	1.6			10	W	W	0	0	Gloomy	
Rangoon																			
Jubbulpore	28.44	722.4	29.80	756.8	84.5	29.2	67	NW	3.3	1.5			7	W		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Valdobbia	22.22	564.5	30.09	764.3	40.8	4.9	86	NNW			1		10			0	0		Ab. Dom. Morgini.
Stelvio	22.22	564.5	30.11	764.8	34.9	1.6		ENE			1		10			0	0		Signora Ernesta Manfredi.
Udine	29.63	752.5	30.04	762.9	64.6	18.1	41	SE	7.4	3.3			7			0	0		Prof. Giovanni Clodig.
Padua	29.92	760.0	30.03	762.8	64.6	18.1	46	NE	11.2	5.0			8	E		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.84	757.9	30.03	762.8	64.4	18.0	45	S	2.5	1.1			2	W		0	0		Conte Alm. Da Schio.
Verona	29.80	757.0	30.02	762.6	71.6	22.0	46	E	11.9	5.3			8	W		0	0		Dott. B. Bertoncelli.
Bergamo	28.75	730.2	30.06	763.5	59.0	15.0	60	W			1		10			0	0		Prof. Trionfini Carlo.
Domodossola	29.04	737.5	30.07	763.6	57.7	14.3	68	S			6		10			0	0		Prof. Giuseppe Calza.
Milan	29.58	751.2	30.10	764.4	60.4	15.8	67	NE			2		10	E		0	0		Ab. Gio. Capelli.
Pavia	29.72	754.8	30.07	763.6	61.3	16.3	59	NE			2		8	NE		0	0		Prof. Gio. Cantoni.
Moncalieri	29.16	740.7	30.07	763.8	61.0	16.1	59	NNE	1.3	0.6			9	W		0	0		Prof. P. F. Denza.
Mondovi	28.16	715.3	30.06	764.0	57.2	14.0	49	N			4		7	NW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.77	756.1	29.98	761.6	68.7	20.4	25	ENE			6		7			0	0		Prof. L. Vassallo.
Genoa	29.82	757.3	29.98	761.6	68.4	20.2	40	NW	7.4	3.3			2	SW		0	0		Prof. G. M. Garibaldi
Piacenza	29.80	757.0	30.06	763.5	63.9	17.7	39	E	9.4	4.2			6	E		0	0		Dott. G. Manzi.
Parma	29.72	754.9	30.04	762.9	64.4	18.0	41	NE			4		5			0	0		Prof. P. Pigorini.
Florence	29.74	755.4	30.00	761.9	67.5	19.7	37	NE			6		5	SE		0	0		Cav. F. Meucci.
Leghorn	29.88	758.9	29.96	761.0	67.6	19.8	35	ENE	3.1	1.4			5			0	0		Prof. P. Monte.
Siena	28.76	730.5	29.97	761.1	64.0	17.8	40	ENE	6.3	2.8			8	N		0	0		Prof. L. Toscani.
Urbino	28.50	724.0	30.07	763.7	57.0	13.9	81	NE			2		9			0	0		Prof. P. Serpieri.
Pesaro	29.97	761.3	30.02	762.5	61.3	16.3	76	NW	6.3	2.8			10			0	0		Prof. Luigi Guidi.
Ancona	29.87	758.7	29.98	761.4	65.5	18.6	57	N			4		7			0	0		Prof. F. DeBosis.
Grosseto	29.86	758.5	29.97	761.3	70.5	21.4	36	ENE			4		5	SE		0	0		Avv. P. Ponticelli.
Rome	29.73	755.2	29.91	759.6	71.4	21.9	37	W	3.1	1.4			1			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.73	755.2	29.93	760.2	70.5	21.4	39	SE			2		10	SSW		0.031	0.8		Prof. L. Palmieri.
Lecce	29.66	753.4	29.91	759.7	68.2	20.1	65	N	9.8	4.4			8	SE		0.087	2.2		Prof. C. De Giorgi.
Cosenza	29.13	739.8	30.00?	762.0?	62.6	17.0	88	SE	1.3	0.6			10			0.350	8.9		Prof. F. D. Conti.
Cagliari	29.62	752.3	29.81	757.1	76.6	24.8	49	S			2		8	NE		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.78	756.3	29.82	757.5	68.0	20.0	88	SW			4		10	E		4.684	119.0		Prof. F. Caffero.
Palermo	29.48	748.9	29.73	755.2	73.4	23.0	75	W	5.6	2.5			10			1.256	31.9		Prof. G. Cacciatore.
Caltanissetta	27.86	707.6	29.77	756.2	67.3	19.6	96	E			8		10			1.528	38.8		Prof. A. Pagani.
Syracuse	29.71	754.6	29.78	756.5	73.4	23.0	86	SE			6		9	E		0.406	10.3		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.39	746.6	29.95	760.7	66.6	19.2	88	ESE	2.5	1.1			10			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,145.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.87	758.7	29.97	761.2	60.5	15.8	94	NW	5	2.2			18			0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.11	587.0	30.16	766.0	54.5	12.5	58	W	0.2	0.11		0	0			0	0	Blue sky	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Fabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Paboll n, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.14	765.6	30.14	765.6	59.5	15.3		NNW			1					0	0		
Groningen	30.03	762.8	30.09	764.2	56.1	13.4		NE			1					0	0		
Helder	30.09	764.3	30.09	764.3	56.1	13.4		N			2					0.020	0.5		
Hellevoetsluis			30.11	764.8	60.1	15.6	71	NW			4								
Utrecht	30.05	763.2	30.10	764.4	57.7	14.3	69	N			3		2			0	0	Light cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter; except Hellevoetsluis by force scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.11	764.8	30.17	766.2	51.1	10.6	65	Calm	0	0			1			0	0		
Brönö	29.94	760.5	29.98	761.5	43.5	6.4	86	S	7	3			10			0	0		
Christiania	30.00	762.1	30.15	765.9	46.6	8.1	75	NW	0	0			2			0	0		
Tromsö	29.70	754.4	29.74	755.5	31.8	— 0.1	100	SW	4	2			10			0.197	5.0	Snowing	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.91	759.7	30.10	764.5	70.2	21.2	92	SW	19.9	8.9			10			3.582	91.0		Dr. J. A. Sampaio
Campo Major	29.04	737.7	30.06	763.4	68.4	20.2	59	NNW	11.2	5.0			7	NNW		0.110	2.8		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.15	765.9	30.23	767.7	73.4	23.0	61	SW	11.9	5.3			7			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.76	756.0	30.12	765.0	67.8	19.9	59	NNW	21.0	9.4			3			0	0		The Staff.
Ponta Delgada, (Azores)	30.12	765.1	30.19	766.9	70.5	21.4	91	S	9.8	4.4			10			0.059	1.5		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.86	758.4	30.29	769.3	51.8	11.0	54	ESE	4	2			5						Astronomical Obs.
Wilna	29.91	759.7	30.34	770.6	48.2	9.0	49	W	2	1			3						Astronomical Obs.
Dorpat	29.92	759.9	30.17	766.3	43.9	6.6	67	WNW	7	3			7						Physical Cabinet.
St. Petersburg	29.97	761.3	29.99	761.7	43.0	6.1	56	WNW	16	7			8						Central Physical Obs.
Kuopio	29.49	749.1	29.83	757.6	34.2	1.2	100	WSW	27	12			10					Snowing	Ch. Forsten.
Zieff	29.65	753.0	30.30	769.6	46.2	7.9	54	N	4	2			4						Physical Cabinet.
Nikolaiev	30.27	768.8	30.34	770.6	56.8	13.8	41	NE	0	0			0						Kurdakof.
Kertch	30.28	769.1	30.30	769.6	61.2	16.2	59	N	7	3			4						Lagorio.
Moscow	29.49	749.1	30.06	763.4	40.1	4.5	43	NE	9	4			7						Meteorological Obs.
Lugan	30.01	762.2	30.21	767.4	47.5	8.6	35	NW	13	6			2						Meteorological Obs.
Archangel	29.54	750.3	29.56	750.8	33.4	0.8	92	W	34	15			10					Snowing	Ogorodnikof.
Tiflis	28.70	728.9	30.09	764.2	68.2	20.1	24	N	4	2			2						Physical Observatory.
Astrakhan	30.19	766.9	30.11	764.8	50.5	10.3	40	WNW	13	6			2						Sebastianof.
Kasan	29.34	745.2	29.61	752.2	34.5	1.4	74	WNW	7	3			7						Physical Cabinet.
Orenburg	30.02	762.6	30.40	772.2	51.4	10.8		E	13	6			10						Tschernischef.
Ekaterinburg	28.31	719.1	29.26	743.2	37.8	3.2	78	W	2	1			8						Meteorological Obs.
Nukuss	29.84	757.8	30.07	763.7	60.6	15.9	63	WNW	2	1			0						
Kasaly																			Bobrof.
Tashkend	28.47	723.0	30.14	765.6	64.0	17.8	63	N	7	3			10						Michelson.
Barnaul	29.40	746.8	29.93	760.1	47.7	8.7	76	NE	0	0			4						Meteorological Obs.
Yeniseisk	29.87	758.8	30.02	762.5	41.0	5.0	84	E	7	3			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.91	759.8	30.05	763.4	60.1	15.6	46	Calm	0	0			10						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					53.1	11.7	95	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran
Burgos, Met. Obs'y																			Domingo Martin y Perez
Madrid, Royal Observatory	27.80	706.2	29.99	761.7	65.5	18.6	64	NE	6.7	3.00		0	8			0.051	1.3	Almost cov'd	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.76	755.8	29.84	757.9	81.1	27.3	87	SSE	10.1	4.5		7c	1ks	N		0.087	2.2	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.99	761.6	30.08	764.1	67.5	19.7	69	WNW	19.7	8.80		0	6		NW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.89	759.3	83.7	28.7	80	SE	0	0		6s	1k			0.030	0.75	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.80	756.8	29.84	757.8	40.3	4.6		NW			4		0			0	0		
Umea	29.87	758.8	29.93	760.1	47.8	8.8	63	N			2		6					Raining	
Hernosand	29.97	761.1	30.02	762.4	53.6	12.0	54	WNW			4		7			0	0		
Stockholm	29.96	760.9	30.13	765.4	51.1	10.6	74	S			2		2			0	0		
Wisby	30.18	766.5	30.24	768.0	49.3	9.6	69	W			6		0			0	0		
Sub-Series.																			
Upsala	30.04	763.1	30.12	765.0	52.0	11.1	53	SW	9.4	4.2			1	NW		0.005	0.12		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.62	726.9	30.03	762.7	59.9	15.5	59	NNE			1		2			0	0	Vapory	The Observatory.
Zurich	28.42	721.8	30.05	763.2	55.8	13.2	76	W			1		4			0	0	Bright	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +0.4 mm; Thermometer, 0.0 cent.: Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.15	765.9	66.6	19.2	56	ENE	22	10.0			3		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.21	767.2	78.4	25.8		SW			1		10						B. Stefanides.
Valona			30.02	762.6	72.0	22.2		NW			1		5			0	0	Cloudy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.94	760.5	86.2	30.1	65	W			2		7c;k		SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.74	755.4	29.81	757.2	62.1	16.7	72	SW	18	8.0			0						Hon. J. Ferguson.
Brockville, Ontario			30.05	763.3	68	20.0		SW	8	3.6		2c	0	SW		0	0	Fair	W. R. Bigg.
*Chatham, N. B			29.90	759.4	56	13.3	74	SW	12	5.4		0	0			0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island			30.01	762.2	60	15.6	62	SW	15	6.7		0	5ks		SW	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.78	756.4	29.97	761.2	69.8	21.0	68	SE			5	10cs	0	SW		0	0	Fair	James Smith, M. A.
Dalhousie, N. B	29.79	756.7	29.82	757.4	58.4	14.7	75	W			2					0	0	Bright	H. A. Johnson.
Esquimault, B. C	29.80	756.9	29.85	758.2	45.3	7.4	100	N				4cs	0			0.23	5.8	Cloudy	W. H. Bevis.
*Father Point, Quebec			29.73	755.1	66	18.9	74	S	29	13.0		5k	Haze	W	S	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	29.99	761.7	30.05	763.3	57.0	13.9	76	S	2	0.9			Haze			Inap.	Inap.	Hazy	Prof. Harrison.
*Fort Garry, Manitoba			30.23	767.8	30	—1.1	94	NW	3	1.3		2c	2s	N	N	0	0	Fair	James Stewart.
Goderich, Ontario	29.29	744.0	30.05	763.3	68.7	20.4	80	SW			2	5k	5n	W		0	0	Cloudy	H. J. Strang, M. A
Granton, Ontario	28.98	736.1	30.05	763.3	61	16.1	94	S			1	0	0			0	0	Clear	James Grant.
*Halifax, N. S	30.01	762.2	30.15	765.8	56	13.3	56	W	15	6.7		0	0			0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.72	754.9	30.08	764.0	69.7	20.9	77	SW			4	2c	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	30.00	762.0	30.02	762.5	49	9.4	81	SW			4		10n			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.75	755.6	30.10	764.5	65	18.3	87	S	12	5.4		2c	0	Calm		0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.79	756.7	29.99	761.7	62	16.7	86	SW	12	5.4		5c	5ks	SW	SW	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.30	744.2	29.97	761.2	66	18.9	89	SW	7	3.1		2ck	5ks	SW	SW	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.30	744.2	30.03	762.7	67.1	19.5	84	Calm			0					0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario	29.41	747.0	30.08	764.0	67	19.4	89	S	10	4.5		5c	0	W		0	0	Fair	H. Morgan.
Port Hastings, N. S	30.03	762.7	30.08	764.0	61.5	16.4		SW	8	3.6						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.45	748.0	30.08	764.0	66	18.9	96	S	2	0.9		5ck	Haze	W		0	0	Fair	M. Payne.
*Quebec, Quebec	29.62	752.3	29.94	760.5	62	16.7	83	SW	3	1.3			10n		SW	0	0	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.49	749.0	29.93	760.2	62	16.7	94	Calm	0	0		8ck	0	NW		Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B	29.97	761.2	30.14	765.5	54	12.2	83	S	6	2.7		0	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.30	744.2	29.98	761.5	69	20.6	86	SW	6	2.7			10ks		S	0	0	Cloudy	K. Stewart.
Stayner, Ontario			29.98	761.5	71	21.7	66	W	8	3.6			10ks		SW	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.78	731.0	30.02	762.5	65.0	18.3	83	SW	7	3.1		2cs	5s	N		0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	30.04	763.0	30.07	763.8	61	16.1	64	SW	14	6.3		5ck	0	NW		0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.69	754.1	30.06	763.5	66	18.9	81	SW	4	1.8		5cs	2ks	W	W	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					47.0	8.3	85	SW				10k	10s			0.01	0.3	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.97	761.2	30.20	767.1	56	13.3	73	S	3	1.3		0	0			0	0	Clear	
Alpena, Michigan	29.31	744.5	29.94	760.5	65	18.3	89	W	2	0.9		2ck	2s	W		0.13	3.3	Fair	
Atlantic City, New Jersey	30.22	767.6	30.24	768.1	62	16.7	88	E	3	1.3		0	0			0	0	Clear	
Augusta, Georgia	29.91	759.7	30.09	764.3	68	20.0	69	NE	5	2.2			10s		NE	0	0	Cloudy	
Baltimore, Maryland	30.20	767.1	30.25	768.3	58	14.4	81	N	2	0.9		Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	30.21	767.3	30.23	767.8	63	17.2	88	N	6	2.7		0	0			0	0	Clear	
Bismarck, Dakota	28.38	720.8	30.09	764.3	43	6.1	75	NE	2	0.9			10n		Calm	0.01	0.3	Light rain	
Boise City, Idaho	27.07	687.6	29.67	753.6	44	6.7	51	S	4	1.8			10s		SW	0	0	Cloudy	
Boston, Massachusetts	30.05	763.3	30.20	767.1	62	16.7	61	SW	9	4.0		0	Haze			0	0	Clear	
Brackettville, Texas	28.76	730.5	29.75	755.6	73	22.8	54	Calm	0	0		5ck		Calm		0	0	Fair	
Breckenridge, Minnesota	29.14	740.1	30.17	766.3	38	3.3	90	N	5	2.2			10ks		Calm	0	0	Cloudy	
Brownsville, Texas	29.84	757.9	29.91	759.7	72	22.2	90	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.39	746.5	30.07	763.8	67	19.4	74	SW	5	2.2		1c	0	SW		0	0	Clear	
Burlington, Vermont	29.85	758.2	30.10	764.5	64	17.8	62	S	10	4.5		0	0			0	0	Clear	
Cairo, Illinois	29.68	753.9	30.06	763.5	70	21.1	79	S	2	0.9		10ck	0	Calm		0	0	Cloudy	
Camp Grant, Arizona								W				5k	0	SW		0	0	Fair	
Camp Verde, Arizona	26.72	678.7	30.21	767.3	60	15.6	70	E	3	1.3		0	0			0	0	Clear	
Campo, California	27.35	694.7	29.92	760.0	47	8.3	60	NE	18	8.0		2c	Haze	SW		0	0	Fair	
Cape Hatteras, N. Carolina	30.04	763.0	30.04	763.0	71	21.7	90	NE	18	8.0		5cs	0	SE		0	0	Fair	
Cape Henry, Virginia	30.13	765.3	30.16	766.1	70	21.1	75	NE	28	12.5			10s		NE	0	0	Threatening	
Cape Lookout, N. Carolina	30.07	763.8	30.08	764.0	70	21.1	90	NE	8	3.6		0	0			0	0	Clear	
Cape May, New Jersey	30.19	766.8	30.22	767.6	64	17.8	83	NE	12	5.4			10s		NE	0	0	Cloudy	
Charleston, South Carolina	30.00	762.0	30.07	763.8	68	20.0	79	SW	4	1.8		0	0			0	0	Clear	
Cheyenne, Wyoming	23.99	609.3	29.93	760.2	37	2.8	80	SW	8	3.6		0	Fog		Calm	0	0	Clear	
Chicago, Illinois	29.28	743.7	29.95	760.7	68	20.0	79	SE	1	0.4		0	Fog		SE	0	0	Clear	
Cincinnati, Ohio	29.38	746.2	30.01	762.2	63	17.2	78	E	8	3.6			Haze		Calm	0	0	Hazy	
Cleveland, Ohio	29.40	746.7	30.11	764.8	64	17.8	73	SW	4	1.8		1c	0	SW		0	0	Clear	
Concho, Texas	27.99	710.9	29.62	752.3	67	19.4	84	E	3	1.3		0	0			0	0	Clear	
Corsicana, Texas	29.47	748.5	29.92	760.0	68	20.0	84	SW	1	0.4		4ck	1s	Calm	SW	0	0	Fair	
Davenport, Iowa	29.33	745.0	29.94	760.5	70	21.1	79	SE	3	1.3		0	0			0	0	Clear	
Denison, Texas	29.18	741.2	29.95	760.7	70	21.1	84	S	4	1.8		0	0			0	0	Clear	
Denver, Colorado	24.80	629.9	30.02	762.5	42	5.6	42	SW	5	2.2		1cs	Sm'e	Calm	Calm	0	0	Fair	
Detroit, Michigan	29.37	746.0	30.01	762.2	67	19.4	69	NE	14	6.3		Haze	5s	Calm	E	0	0	Fair	
Dodge City, Kansas	27.36	694.9	29.62	752.3	52	11.1	86	N	3	1.3			10s		Calm	0	0	Cloudy	
Dubuque, Iowa	29.27	743.4	29.95	760.7	66	18.9	84	SE	9	4.0			8s		W	Inap.	Inap.	Cloudy	
Duluth, Minnesota	29.46	748.3	30.15	765.8	46	7.8	76	N	1	0.4		1ck	0	NW		0	0	Clear	
Eagle Pass, Texas	29.11	739.4	29.83	757.7	69	20.6	70	SW	10	4.5		Haze	Haze		SW	0	0	Hazy	
Eastport, Maine	30.02	762.5	30.09	764.3	59	15.0	64	S	12	5.4		2c	Haze			0	0	Fair	
Erie, Pennsylvania	29.38	746.2	30.07	763.8	67	19.4	68	N	24	10.7			10s		N	0.26	6.6	Cloudy	
Escanaba, Michigan	29.43	747.5	30.08	764.0	50	10.0	79	W				5k	0	W		0	0	Fair	
Florence, Arizona	28.29	718.6	29.89	759.2	77	25.0	49	NE	8	3.6		5cs	0	SW		0	0	Fair	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	56	13.3	56	N	1	0.4		0	2s		N	0	0	Fair	
Fort Craig, New Mexico	25.50	647.7			50	10.0	79	SE	5	2.2		2cs	2ks	Calm	Calm	0	0	Fair	
Fort Gibson, Indian Ter.	29.41	747.0	29.93	760.2	71	21.7	80	Calm	0	0		8ck	0	N		0	0	Cloudy	
Fort Griffin, Texas	28.55	725.2	29.78	756.4	66	18.9	78												
Fort St. Michael, Alaska								E	4	1.8		0	8s		W	0.02	0.5	Fair	
Fort Sill, Indian Territory	28.71	729.2	29.78	756.4	70	21.1	84	Calm	0	0		5c	0	Calm		0	0	Fair	
Fort Sully, Dakota	28.45	722.6	30.14	765.5	44	6.7	67	E	6	2.7		0	0			0	0	Clear	
Galveston, Texas	29.84	757.9	29.88	758.9	74	23.3	81	SW	15	6.7		2k	2s	W	W	0	0	Fair	
Grand Haven, Michigan	29.34	745.2	29.96	761.0	69	20.6	84	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Indianapolis, Indiana	29.28	743.7	30.04	763.0	63	17.2	78	N	15	6.7		0	0			0	0	Clear	
Indianola, Texas	29.89	759.2	29.92	760.0	73	22.8	85												
Jacksboro, Texas								NE	10	4.5			10n		NE	2.46	62.2	Heavy rain	
Jacksonville, Florida	29.92	760.0	29.95	760.7	74	23.3	95	SW	8	3.6		2ck	Haze	SW	Calm	0	0	Fair	
Keokuk, Iowa	29.22	742.2	29.90	759.4	74	23.3	76	S	16	7.2			8s		SW	0.21	5.3	Cloudy	
Key West, Florida	29.77	756.1	29.80	756.9	82.5	28.1	81	NE	24	10.7		0	2s		Calm	0	0	Fair	
Kittyhawk, North Carolina	30.13	765.3	30.15	765.8	70	21.1	95	Calm	0	0		0	Sm'e			0	0	Smoky	
Knoxville, Tennessee	29.11	739.4	30.10	764.5	61	16.1	77	N	7	3.1			10s		N	0	0	Cloudy	
La Crosse, Wisconsin	29.27	743.4	29.99	761.7	59	15.0	81	Calm	0	0		0	0			0	0	Clear	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	60	15.6	60	E	3	1.3		0	0			0	0	Clear	
Laredo, Texas					76	24.4	86	S	4	1.8		8ck	2s	W	Calm	0	0	Cloudy	
Leavenworth, Kansas	29.07	738.4	29.88	758.9	69	20.6	84	N	2	0.9			10s		N	0	0	Cloudy	
Los Angeles, California	29.55	750.6	29.88	758.9	61	16.1	88	NE	1	0.4		0	Fog		Calm	0	0	Foggy	
Louisville, Kentucky	29.50	749.3	30.04	763.0	65	18.3	83	NE	4	1.8		0	5s		W	0	0	Fair	
Lynchburg, Virginia	29.54	750.3	30.22	767.6	62	16.7	66	N				0	0			0	0	Clear	
Maricopa Wells, Arizona					65	18.3	62	N	8	3.6			10s		Calm	0.60	15.2	Cloudy	
Marquette, Michigan	29.37	746.0	30.08	764.0	48	8.9	77	Calm	0	0		0	2s			0	0	Clear	
Mason, Texas	28.29	718.6	29.99	761.7	67	19.4	84	SE	2	0.9		2c	Fog	SW	Calm	0	0	Fair	
Memphis, Tennessee	29.72	754.9	30.03	762.7	68	20.0	90	NE	20	8.9			10s			0	0	Cloudy	
Milwaukee, Wisconsin	29.35	745.5	30.03	762.7	55	12.8	87	NE	8	3.6			10s		E	0	0	Cloudy	
Mobile, Alabama	29.83	757.7	29.87	758.7	73.5	23.1	74	NE	12	5.4		5c	2ks	SW	E	0	0	Fair	
Montgomery, Alabama	29.75	755.6	29.98	761.5	75.5	24.2	50	Calm	0	0		1c	Fog	SW		0	0	Fair	
Morgantown, West Virginia	29.11	739.4	30.15	765.8	61	16.1	77	NW	30	13.4			Fog		NW	0	0	Foggy	
Mt. Washington, N. H.	24.02	610.1	30.38	771.6	51	10.6	93	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Nashville, Tennessee	29.56	750.8	30.09	764.3	63	17.2	94	Calm	0	0		Haze	Fog		Calm	0	0	Fair	
New Haven, Connecticut	30.11	764.8	30.22	767.6	59	15.0	81	Calm	0	0		0	Fog		N	0	0	Clear	
New London, Connecticut	30.18	766.6	30.23	767.8	60	15.6	82	NE	13	5.8		4c	1s	S	Calm	0	0	Fair	
New Orleans, Louisiana	29.76	755.9	29.82	757.4	71.5	21.9	73	SW	4	1.8		0	0			0	0	Clear	
Newport, Rhode Island	30.18	766.6	30.23	767.8	62	16.7	78	W	2	0.9		0	Fog			0	0	Clear	
New York, New York	30.06	763.5	30.24	768.1	61	16.1	77	NE	4	1.8		5c	Haze	NW	Calm	0	0	Fair	
Norfolk, Virginia	30.13	765.3	30.19	766.8	67	19.4	90	NE	4	1.8		0	Sm'e		Calm	0	0	Smoky	
North Platte, Nebraska	27.12	688.8	29.73	755.1	39	3.9	80	Calm	0	0			10n		Calm	0.54	13.7	Light rain	
Olympia, Washington Ter.	29.80	756.9	29.84	757.9	45	7.2	92	N	11	4.9			10s		Calm	0	0	Cloudy	
Omaha, Nebraska	28.87	733.3	29.93	760.2	53	11.7	86	SE	6	2.7		0	Sm'e			0	0	Clear	
Oswego, New York	29.78	756.4	30.10	764.5	64	17.8	81	W	3	1.3			10s		Calm	0	0	Cloudy	
Pembina, Dakota	29.40	746.7	30.27	768.8	30	— 1.1	89	NE	5	2.2		0	Fog		Calm	0	0	Clear	
Philadelphia, Pennsylvania	30.20	767.1	30.25	768.3	60	15.6	77	Calm				5ck	0	SW		0	0	Fair	
Phœnix, Arizona					67	19.4	59	W	12	5.4		5k	0	W		0	0	Fair	
Pike's Peak, Colorado	17.88	454.1	30.09	764.3	29	— 1.7	59	S	7	3.1		0	0			0	0	Clear	
Pioche, Nevada	24.00	609.6	29.77	756.1	54	12.2	10	Calm	0	0		2k	Fog	S	Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.33	745.0	30.14	765.5	57	13.9	93	SW	4	1.8		10cs	Sm'e	NW		0	0	Cloudy	
Port Huron, Michigan	29.37	746.0	30.01	762.2	67	19.4	79	SW	12	5.4		0	Haze			0	0	Clear	
Portland, Maine	30.07	763.8	30.12	765.0	57	13.9	63	S	4	1.8			10n		S	0.03	0.8	Light rain	
Portland, Oregon	29.84	757.9	29.94	760.5	47	8.3	85	Calm				0	2s		Calm	0	0	Fair	
Prescott, Arizona	24.82	630.4	30.18	766.6	50	10.0	71	E	16	7.2		2cs	8ks	Calm	E	0.48	12.2	Threatening	
Punta Rassa, Florida	29.80	756.9	29.82	757.4	78	25.6	86	SE	6	2.7		5k	2s	Calm	Calm	0	0	Fair	
Red Bluff, California	29.54	750.3	29.89	759.2	59	15.0	43					0	0			0	0	Clear	
Rochester, New York	29.46	748.3	30.06	763.5	67	19.4	69	SW	13	5.8									

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.34	745.2	29.92	760.0	45	7.2	84	E	6	2.7			10n		Calm	0.02	0.5	Light rain	
Sacramento, California	29.84	757.9	29.92	760.0	54	12.2	55	S	4	1.8		0	Sm'e		Calm	0	0	Clear	
St. Louis, Missouri	29.46	748.3	30.02	762.5	69	20.6	85	S	3	1.3			Fog			0	0	Foggy	
St. Marks, Florida	29.90	759.4	29.91	759.7	70	21.1	95	E	12	5.4			10n		E	0.25	6.3	Light rain	
St. Paul, Minnesota	29.20	744.7	30.04	763.0	48	8.9	85	N	4	1.8		0	0			0	0	Clear.	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.52	648.2	29.85	758.2	50	10.0	58	NE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.21	741.9	29.77	756.1	69	20.6	90	SE	2	0.9		0	0			0	0	Clear	
San Diego, California	29.84	757.9	29.91	759.7	63	17.2	83	NE	1	0.4			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.43	747.5	30.08	764.0	68	20.0	64	SW	2	0.9		1c	Sm'e	Calm	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.22	767.6	30.24	768.1	61	16.1	82	W	2	0.9		0	Sm'e		Calm	0	0	Clear	
San Francisco, California	29.93	760.2	29.99	761.7	53	11.7	73	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	49	9.4	57	E	7	3.1		Haze	5ks		W	0	0	Cloudy	
Savannah, Georgia	29.93	760.2	30.02	762.5	68	20.0	84	E	11	4.9			10s		E	0	0	Cloudy	
Shreveport, Louisiana	29.74	755.4	29.95	760.7	70	21.1	75	E	2	0.9		0	0			0	0	Clear	
Smithville, North Carolina	30.07	763.8	30.10	764.5	67	19.4	90	N	12	5.4		10cs	0	Calm		0	0	Cloudy	
Springfield, Massachusetts	30.02	762.5	30.15	765.8	57	13.9	81	S	4	1.8		0	0			0	0	Clear	
Stanwix, Arizona					70	21.1	67	SW				0	5ks		Calm	0	0	Fair	
Stockton, Texas					70	21.1	66	S	12	5.4		0	2s		SW	0.05	1.3	Fair	
Thatcher's Island, Mass	30.14	765.5	30.20	767.1	58	14.4	81	SW	12	5.4		0	0			0	0	Smoky	
Toledo, Ohio	29.39	746.5	30.04	763.0	67	19.4	84	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Tucson, Arizona	27.47	697.7	30.02	762.5	70	21.1	75	S				0	2ks		S	0	0	Fair	
Tybee Island, Georgia	29.98	761.5	30.01	762.2	70	21.1	90	NE	28	12.5			10s		Calm	0	0	Threatening	
Umatilla, Oregon	29.51	749.5	30.00	762.0	35	1.7	69	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.70	754.4	29.96	761.0	69	20.6	79	NE	6	2.7		0	0			0	0	Clear.	
Virginia City, Montana	24.18	614.2	29.66	753.4	34	1.1	79	Calm	0	0			10s		Calm	0	0	Cloudy	
Visalia, California	29.58	751.3	29.95	760.7	51	10.6	59	NW	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.13	765.3	30.25	768.3	59	15.0	81	SE	1	0.4		0	Fog		SE	0	0	Fair	
Wickenburg, Arizona					56	13.3	30	S				0	0			0	0	Clear.	
Wilmington, N. Carolina	30.02	762.5	30.10	764.5	66	18.9	84	NE	9	4.0		8c	0	W		0	0	Fair	
Winnemucca, Nevada	25.54	648.7	29.90	759.4	40	4.4	32	W	10	4.5		0	2s		W	0	0	Fair	
Wood's Holl, Mass	30.19	766.8	30.25	768.3	63	17.2	78	SW	9	4.0		0	0			0	0	Clear.	
Yankton, Dakota	28.82	732.0	30.15	765.8	36	2.2	80	NW	3	1.3		0	0			0	0	Clear.	
Yuma, Arizona	29.67	753.6	29.84	757.9	61	16.1	36	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.72	754.9	29.78	756.4	31.0	— 0.6	95	W	10	4.5		0	7s		W	0.20	5.1	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.78	756.4	29.80	756.9	82	27.8	87	S	4.8	2.1		8c	2ks	NW	Calm	0.16	4.1	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	83	28.3	83	SE	7	3.1		5c	2s	SE		0	0		James Gall.
Santiago de Cuba, W. I.	29.93	760.2	29.94	760.5	82	27.8	83	Calm	0	0		0	1ks		SE	0	0	Fine	T. W. Beattie.
Navassa, W. I.	29.84	757.9	29.92	760.0	84	28.9		SE			1					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					87	30.6	79	Calm				5ck	4s	Calm		Inap.	Inap.		G. O. Gellich.
Pe-a-Pitre, G'd'loupe, W. I.	29.96	761.0	29.98	761.5	81	27.2	83	SE				2k	5ks		SE				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.05	763.3	85	29.4	72	E			3	4c	0	E		0.020	0.51	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.29	642.4			65.2	18.4	89	Calm			0	10cs;k	0			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,560 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,460 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.96	761.0	55	12.8	54	12.2	55	WSW	18	8.0			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	29.97	761.2			76	24.4	73	NE	19	8.5			10		SE	0.15	3.8			D. clouds	
Navy Yard, Portsmouth, N.H	30.19	766.8	68	20.0	57	13.9	75	SW	3	1.3						0	0			Clear	
Naval Hospital, Yokohama, Japan	29.89	759.2	69.5	20.8	66	18.9	94	E			2		8s;sm'r		E	0	0			Cloudy	
Adams, Montevideo, Uruguay	29.94	760.5	64	17.8	57	13.9	75	SW			2		0			0	0	Light	W	Blue sky	
Alert, Straits of Tsugar	30 05†	763.3†	69	20.6	69	20.6	90	ESE			5–6		1		SE			Chop	Cross	Squally	
Alliance, Constantinople, Turkey.	30.25	768.3	68	20.0	68	20.0	56	NE			4		3		NE					Clear	
Ashuelot, Che-foo, China	30.10	764.5	70	21.1	62	16.7	51	NNW			6–7		2		N			Chop mod.	N	Squally	
Canonicus, New Orleans, La.	29.85	758.2	54	12.2	72	22.2	76	E			3		5							Partly cl'dy	
Colorado, New York, N. Y.	30.31	769.9	65	18.3	63	17.2	78	WNW	3	1.3			7		WNW	0	0			Dense fog	
Despatch, Beikos Bay, Bosphorus	30.28	769.1	71	21.7	67	19.4	58	NE			3–4		4		NE			Smooth		Pleasant	
Franklin, Norfolk, Va.	30.22	767.6	67	19.4	68	20.0	100	E	4	1.8			2		E	0	0			Clear	
Frolic, Barbados, W. I.	30.18	766.6	85	29.4	86	30.0	96	SE			2		3k		Calm	0	0	Smooth		D clouds	
Gettysburg, Naples, Italy	29.85‡	758.2‡			71	21.7	100	NE			2		10		Calm	0	0			D. clouds	
Kearsarge, N. 1° 30′, E. 102° 56′	29.87	758.7			86	30.0	76	N&W			1		4			0	0	Smooth		D. clouds	
Lackawana, Semi-ah-moo Bay, W. T.	29.90	759.4			49	9.4	85	NE			2–3		10		SSW			Smooth		D. clouds	
Marion, Smyrna, Turkey	30.00	762.0	76	24 4	78	25.6	57	NW			3		5		NW	0	0	Smooth		D. clouds	
Michigan, Erie, Pa.	29.62	752.3	72	22.2	71	21.7	66	SE			2		0							Clear	
Monocacy, Hakodadi, Japan	29.95	760.7	68	20.0	65	18.3	84	ESE			4		10		ESE			Smooth		Drizzling	
Monongahela, N. 37° 33′, W. 63° 00′	30.20	767.1	73	22.8	73	22.8	81	ENE			6		k			Light	Light	Moderate.	N&E	D. clouds	
New Hampshire, Port Royal, S. C.	30.20	767.1			69	20.6	85	NE	17	7.6			10		NE	0	0			D. clouds	
Omaha, S. 32° 59′, W. 71° 40′	29.88	758.9	61	16.1	61	16.1	82	SE	4	1.8			1		Calm	0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.06	763.5	69	20.6	66	18.9	94	S			1		10					Long	W	Misty	
Ossipee, New York, N. Y.	30.29	769.4	68	20.0	61	16.1	94	NW			0–1		1		Calm					Foggy	
Palos, Poo-to, China	30.14	765.5	69	20.6	68	20.0	60	Calm			0		0			0	0	Slight	S&E	Clear	
Pensacola, Mare Island, Cal.	30.07	763.8			62	16.7	83	SW			3		0			0	0			Clear	
Plymouth, Lynn Haven Bay	30.48	774.2	74	23.3	71	21.7	100	E			2		7		S			Moderate.	E	Cloudy	
Ranger, Nagasaki, Japan	30.02	762.5			68	20.0	60	Calm			0		2		Calm	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.79	756.7			74	23.3	95	NNW			1		0							Blue sky	
Santee, Annapolis, Md.	30.31	769.9	69	20.6	65	18.3	89	NE			1		2		E	0	0			Clear	
St. Louis, League Island, Pa	30.11	764.8	59	15.0	59	15.0	??	SE			3		3		SE	0	0			Fair	
Tennessee, N. 35° 12′, E. 139° 45′	29.92	760.0	72	22.2	68	20.0	79	NNE	12	5.4			1		N&E	0	0	Light	N&E	Lightning	
Trenton, Marseilles, France	30.08	764.0	73	22.8	70	21.1	70	SW	4	1.8			2		S&W	0	0			D. clouds	
Vandalia, Smyrna, Turkey	30.03	762.7	78	25.6	78	25.6	61	W			2		4		Calm					D. clouds	
Wabash, Boston, Mass.	30.21	767.3	61	16.1	61	16.1	71	SW	2	0.9			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.50†	774.7†	63	17.2	64	17.8		E			1		0							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL. Inches.	BAROMETER REDUCED TO SEA-LEVEL. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 38° 44′, E. 145° 46′			30.21*	767.3*	68	20.0	84	E			3		3		E	Small	E	D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 39° 06′, E. 150° 22′			30.23†	767.8†	66	18.9		ENE			7		8		NE	Chop.	NE&SE	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. *Aneroid. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL. Inches.	BAROMETER REDUCED TO SEA-LEVEL. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL. Inches.	BAROMETER REDUCED TO SEA-LEVEL. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 21° 15′, E. 114° 54′			29.97*	761.2*	80	26.7	100	NNE			4		8		NE	Smooth		D clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 34°, W. 131°			30.00	762.0	66	18.9	68	Var.			3		5		NW	Moderate	NW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL. Inches.	BAROMETER REDUCED TO SEA-LEVEL. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 49° 25′, W. 10° 54′			30.00	762.0	60.0	15.6	82	N			5		0		NW	Tranq'l	WNW	D. clouds	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois. N. 49° 42′, W. 39° 37′			*29.70	*754.4	52	11.1	??	W			7		5		W	Heavy	W	D. clouds	Captain Shackelford.
S. S. Indiana. N. 45° 46′, W. 52° 51′			30.23†	767.8†	49	9.4		NNW			7		3		N	Heavy	NW	Fine	Captain Sargent.
S. S. Ohio, Mersey River.			30.18	766.6	58	14.4	82	E			1		0						Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.02	762.5	71	21.7	80	NE	10	4.5			10s	NE				Overcast	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 2, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.01	762.3	71.2	21.8	69	Calm			0		4			1.110	28.2	Cloudy	Michel.
Algiers			29.88	758.9	68.7	20.4	76	NE			1		8			0.465	11.8	Very cloudy	Peter.
La Calle			29.85	758.2	72.0	22.2	81	NW			3		6			0	0	Cloudy	Fleury.
Tunis			29.79	756.7	79.0	26.1	40	W			4		5			0.079	2.0	Cloudy	Jacques.
Sfax			29.89	759.3	77.0	25.0		S			2		5			0.551	14.0	Cloudy	Husson.
Saida			29.95	760.7	60.4	15.8		NNW			5		2			0.114	2.9	Fair	Millot.
Tebessa			29.85	758.2				SSW			3		4			0	0	Cloudy	Bourgeois.
Gerlville			29.93	760.1	65.3	18.5	67	W			2		8			0	0	Very cloudy	Lemaillot.
Laghouat			29.96	761.0	66.2	19.0	54	W			4		4			0	0	Cloudy	François.
Biskra			29.86	758.5	77.7	25.4	28	NW			3		6			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Gerlville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.26	743.3	29.81	757.1	58.6	14.8	82	SW			1		10			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.14	740.1	29.91	759.6	53.8	12.1	75	NE			1		10			0.012	0.3		Dr. Wierzbiski.
Eperies	28.83	732.2	29.90	759.4	54.1	12.3	83	Calm			0		10n			0	0		Julius Mikolik.
Gratz	28.56	725.5	29.80	756.8	57.9	14.4	83	SW			2		6			0	0		Andreas Rospini.
Hermannstadt	28.48	723.4	29.90	759.5	54.3	12.4	71	SSE			5		8			0.041	1.05		Prof. Reissenberger.
Kremsmünster	28.50	723.9	29.83	757.7	54.3	12.4	77	WNW			1		10			0	0		Prof. C. Wagner.
Lemberg	28.90	734.0	29.88	759.0	54.7	12.6	77	SE			1		5			0	0		Dr. T. Stanecki.
Pola	29.67	753.7	29.78	756.5	66.9	19.4	58	W			2		4ks			0	0		I.R.Hydrographic Office
Szathmar																			Johann Tamas, S. J.
Szegedin																0.644	16.35		Karl Stancel.
Trieste	29.54	750.2	29.82	757.3	51.8	11.0	100	SE			2		10			0	0	Clear	P. Busin.
Vienna	29.71	754.5	29.81	757.1	66.2	19.0	72	NNE			1		0			0	0		I. R. Central Met. Obs'y.
	29.15	740.4	29.84	758.0	54.9	12.7	96	SSE			1		10			0	0		

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.45	722.5	29.96	761.0	50.5	10.3	69	N			0		10			0	0		
Brussels	29.76	756.0	29.97	761.1	52.9	11.6	84	NW			4		10		WNW	0.030	0.75	Raining	Royal Observatory.
Furnes	29.99	761.7	30.01	762.3	54.0	12.2		NNE			2		10			0.437	11.1		
Maeseyck	29.83	757.6	29.96	760.9	54.9	12.7	83	SW			2		10			0.047	1.2		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.94	760.5	30.03	762.7	53.1	11.7		W	7	3.1			0			0	0	Hazy	W. Boswell.
Ardrossan	29.99	761.7	30.00	762.0	58	14.4		SE			1		4					Foggy	William McNeil.
Armagh, Observatory			30.00	762.0	57.7	14.3		SSE	11	4.9			8					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.02	762.5	59.5	15.3		SE	10	4.5			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			29.93	760.2	62.0	16.7		SE			2		4					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.65	753.1	30.05	763.3	53.8	12.1		E			1		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	85.8	29.9		NE			1		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.05	763.3	59.0	15.0		NNW			1		0					Blue sky	H. Todd.
Cardington			30.05	763.3	57.0	13.9		E			0		1					Blue sky	John McLaren.
Chatham, School M. E.	29.92	760.0	30.06	763.5	57.2	14.0		N			2		4					Fine	Lt. W. G. Morris, R. E.
Dartmoor	28.58	725.9	30.05	763.3	54.4	12.4		E			4		5					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.96	761.0	29.99	761.7	58	14.4		SW			2		3					D. clouds	J. Mac Gowan.
Dover	30.00	762.0	30.02	762.5	56	13.3		NNE			3		4					½ clouded	J. Costello.
Eccles, (near Manchester)			30.03	762.7	61.8	16.6		SE	3.0	1.3								Blue sky	Thomas Mackereth.
Falmouth, Observatory	29.79	756.7	30.02	762.5	59.1	15.1		SSE			3		2					Hazy	The Staff.
Fort Napier, (Natal)	27.89	708.4	30.11	764.8	72.4	22.4		N			4		8					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.94	760.5	82	27.8		W			1		4					D. clouds	
Galway, Queen's College					58	14.4		NE			1		3					D. clouds	G. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.98	761.5	30.01	762.2	69.9	21.1		SW			5		1					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.81	757.2	30.02	762.5	51.9	11.1		WSW			1							Hazy	D. G. Maclean.
Great Yarmouth	30.03	762.7	30.04	763.0	56	13.3		NNW			3		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.87	758.7	30.04	763.0	58.5	14.6		NNE			1		1					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.81	757.2	30.03	762.7	60	15.6		ESE			2		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.02	762.5	62	16.7		SE			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	29.96	761.0	30.01	762.2	59	15.0		SSW			2		1					Blue sky	John Tilston.
Jersey	29.75	755.6	30.04	763.0	61.0	16.1		E			1		0					Gloomy	J. Fisher.
Kew, Observatory			30.06	763.5	54.5	12.5		NNE					1					Hazy	The Staff.
Kingstown	29.98	761.5	30.01	762.2	58	14.4		SE			4		5					D. clouds	George Mitchell.
Leicester, Museum			30.08	764.0	56.2	13.4		Calm			0		0					Hazy	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.71	754.6	29.78	756.4	79.8	26.6		NW			2		8					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.91	759.7	30.00	762.0	55	12.8		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.92	760.0	86.2	30.1		SE			1		8			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.88	758.9	30.07	763.8	61.3	16.3		SE			1		0			0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.51	749.5	30.02	762.5	62.5	16.9		SSE			2		0					Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.04	763.0	56	13.3		NE			1		0					Blue sky	F. Lucas
Plymouth	29.95	760.7	30.02	762.5	60.3	15.7		ENE			3		0					Blue sky	John Merrifield.
Roche's Point	29.90	759.4	29.94	760.5															W. Kennedy.
Saint Ann's Head	29.86	758.4	30.02	762.5	58	14.4		SE			3		0					Hazy	John C. Walker.
Sandwick Manse, (Orkneys)			30.00	762.0	54.4	12.4		S	13	5.8			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.94	760.5	75.6	24.2		NE			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.80	756.9	30.04	763.0	54.2	12.3		SSE			1		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.00	762.0	30.03	762.7	56.7	13.7	72	Calm			0		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					56.8	13.8		NE			1								Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.91	759.7	55	12.8		SSE			1		10					Overcast	John Smith.
Stratfield Turgiss	29.86	758.4	30.07	763.8	58.8	14.9		E			1		2					Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso			29.96	761.0	59	15.0		S			1		4					D. clouds	John Trotter.
Truro, Royal Institution			30.02	762.5	64	17.8		SE			4		5					D. clouds	W. Newcombe.
Valencia, Observatory			29.84	757.9	60.1	15.6		SE	31	13.9			10					Misty	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)					57	13.9		SE			2		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.10	764.5	30.14	765.5	68.9	20.5	69	SSE	5	2.2		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.42	772.7	48.0	8.9	76	SE			2		10n			0.17	4.3	Covered	Francis Abbott, F.R.A.S
Leith, Restalrig Park			30.04	763.0	54.0	12.2		W			1					0	0	Hazy	Andrew Gibb.
Mauritius, Observatory	29.89	759.2	30.08	764.0	70.9	21.6	69	SE	11.0	4.9			10		NW	0.03	0.8	Overcast	C. Meldrum.
Melbourne, Observatory	30.41	772.4	30.50	774.7	48.0	8.9	84	SE	3	1.3			4			0.02	0.5	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.95	760.7	56	13.3		S			4		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.03	762.7	52	11.1		S			3	6	4	SW					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.07 m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Fahrenheit.	Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 41° 33′, W. 65° 40′			30.18	766.6	62	16.7		SSW			5		0			0*		Blue sky	Capt. W. Watson.
S. S. Batavia, N. 48° 10′, W. 36° 45′			29.83	757.7	60	15.6		WSW			6		10			6	WSW	Overcast	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine																			Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 28′			29.48	748.8	56	13.3		WSW			6		10			6	WSW	Raining	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 43° 40′, W. 46° 40′			30.17	766.3	60	15.6		WSW			6		6			4	NNW	D. clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
San José	26.25	665.7			67.6	19.8	91	SE			1		0			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.89	759.2	29.94	760.4	50.7	10.4	73	NE			2		6						
Fanöe	29.91	759.8	29.93	760.3	52.2	11.2	75	ENE			2		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.47	748.4	29.51	749.6	52.3	11.3	98	SE			7		10						
Thorshavn, (Faröe)	29.86	758.5	29.90	759.4	51.1	10.6	89	SSE			2		3						
Vestervig	29.78	756.4	29.95	760.7	52.7	11.5	82	ENE			2		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.52	749.7	30.07	763.7	59.0	15	50	NE			2		5		W	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.88	759.0	29.99	761.7	60.1	15.6	73	N			2		5		N	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.75	755.7	29.83	757.7	68.4	20.2	39	N			6		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.41	747.1	29.98	761.5	53.4	11.9	67	NE			2		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.82	757.4	29.97	761.3	61.9	16.6	58	NE	0	0					NE	0	0		Albert Cheux.
Beauvais	29.74	755.5	30.03	762.8	56.3	13.5	60	NNE			2		10		NNE	0	0	Covered	Normal School.
Besançon	29.10	739.1	29.99	761.8	49.3	9.6	89	SW			2		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.12	739.6	30.03	762.8	51.8	11	65	N			4		10			0	0	Foggy	Normal School.
Bourges, Normal School	29.46	748.3	30.01	762.2	59.0	15	73	NNE			1		2		NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.70	754.4	29.92	760.0	67.5	19.7	78	SSW			3		5		SSW	0	0	Foggy	The Staff.
Carcassonne, Normal School	29.45	747.9	29.84	758.0	70.2	21.2	41	E			4		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.61	752.0	30.17	766.3	62.6	17	94	N			1		6		SE	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.08	753.8	30.00	762.0	54.0	12.2	70	N			2		10n			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.65	727.6	29.99	761.7	59.0	15.0	60	NE			1		10			0	0	Covered	Alluard, Director.
Commercy, Normal School	29.09	738.8	29.98	761.4	52.5	11.4	73	NW			2		5n		NW	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.74	729.9	29.88	758.9	67.8	19.9	36	W			2		2		W	0	0	¼ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.83	757.6	30.04	762.9	70.2	21.2	78	NE			2		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.72	754.9	30.03	762.7	56.7	13.7	65	NNE			2		2		NE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.06	738.0	29.98	761.4	48.4	9.1	96	N			1		10			0	0	Covered	Pin, Director.
Lorient, Naval Observatory	29.97	761.1	30.06	763.6	63.7	17.6	65	S			2		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.30	744.2	29.94	760.5	59.2	15.1	98						10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.85	732.9	29.90	759.4	53.2	11.8	71	NNE			2		10		NE	0	0	Covered	Normal School
Nismes, Normal School	29.06	753.4	29.86	758.4	65.3	18.5	50	N			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.82	757.4	30.19	766.9	58.3	14.6	67	SW			2		5		SW	0	0	Cloudy	Bernard, Director.
Paris, Observatory	29.78	756.4	30.02	762.5	53.8	12.1	74	NW			1		10ck		N	0	0	Covered	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.98	761.4	30.01	762.2	66.6	19.2	51	ENE			2		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.94	760.4	30.02	762.6	56.1	13.4	65	NNE			2		10		N	0.008	0.2	Covered	F. Lucard, Director.
Tarbes, Normal School	28.92	734.6	29.97	761.2	69.8	21	49	W			2		0			0	0	Clear	T. Hugues, Director.
Villefranche																			Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.8	28.2										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.81	757.2	70.0	21.1	41	W			1		1			0	0		The Staff.
Mont-Louis	24.81	630.2	30.13	765.2	54.0	12.2	33	NW	13.0	5.83			2		NW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.74	753.3	30.01	762.3	53.4	11.9	76	WNW			2		10		NW	0	0		Marié Davy, Director.
Perpignan			29.85	758.1	71.8	22.1	34	NW	22.4	10.0			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.25	539.7			34.5	1.4		N			2		10					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.49	571.2			36.5	2.5		N			2		4			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.85	758.1	30.01	762.3	55.4	13.0	68	NW			1		10			0	0		E. Renou.
Toulouse, Observatory	29.26	743.3	29.98	761.6	67.5	19.7	38	NW			3		2			0	0		The Staff.
Tours	29.70	754.4	29.90	759.4	68.4	20.2		E			1		5		NNW	0	0		C. Marquet.
Versailles, (near Paris)			30.02	762.4	54.3	12.4	72	NE			1		10			Inap.	Inap.	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.05	763.3	30.08	764.0	61.2	16.2	83	NE	1.8	0.8			9k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.70	754.4	29.87	758.7	57.9	14.4	69	E			1		6			0	0		Prof. Arndt.
Breslau	29.36	745.8	29.89	759.2	52.0	11.1	85	SE			3		10			0.022	0.56	Foggy	Royal University Obs'y.
Carlsruhe	29.48	748.8	29.91	759.6	51.4	10.8	87	SSW			1		10			0	0	Foggy	Albert Senz.
Cassel	29.38	746.2	29.98	761.6	51.1	10.6	89	E			2		3	E		0	0		Dr. H. Möhl.
Crefeld	29.75	755.7	29.91	759.8	55.0	12.8	77	NW			2		10			0	0		Director Lose.
Emden	29.90	759.5	29.94	760.4	53.6	12.0	81	NNE			2		10			0	0		Prof. Prestel.
Frankfort on the Main	29.56	750.9	29.93	760.1	57.9	14.4	58				2		9			0	0		Physical Society.
Friedrichshafen	28.47	723.0	29.89	759.2	55.0	12.8	83	WSW			3		2	WSW		0	0	Foggy	M. Wilhelm.
Hamburg	29.84	758.0	29.91	759.8	50.7	10.4	89	NNE			1		10ks						Captain F. Hegemann.
Kiel	29.90	759.5	29.92	759.9	54.1	12.3	74	N			1		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.84	757.9	29.91	759.7	51.1	10.6	75	SE										Cloudy	Prof. E. Luther.
Köslin			29.88	758.9	55.9	13.3		Calm			0		4			0.024	0.6		H. Müller.
Leipsic, Observatory	29.48	748.7	29.90	759.4	52.2	11.2	83	NW			1		3			0	0		Prof. Bruhns.
Memel, Naval School	29.97	761.1	30.01	762.3	50.9	10.5	52	ESE			1		2c	WNW					Reinbrechtvon Skalweit.
Neufahrwasser	29.94	760.4	29.95	760.8	51.4	10.8	65	E			2		10			0	0		A. Lothes.
Posen	29.65	753.1	29.94	760.5	52.2	11.2	74	SE			5		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace)	29.39	746.4	29.94	760.4	54.1	12.3	74	N			1		10	W		0	0		Dr. Schur.
Stuttgart	28.97	735.8	29.91	759.7	52.7	11.5	80	N			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.30	744.2	29.82	757.4	56.3	13.5	55	NW			1		10			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.37	720.5	29.85	758.2	56.5	13.6	62	NNE			1		9		NE	0	0		Dr. Von Bebber
Wustrow, Naval School	29.92	760.0	29.97	761.2	50.9	10.5	86	NE			2		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.61	752.1	29.99	761.8	76.6	24.8		SW										½ clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.71	754.7	29.76	756.0	83.6	28.7	79	WSW	27.0?	12.1?			0			0	0	Blue sky	
Deesa	29.34	745.3	29.80	757.0	96.7	35.9	33	SE					0			0	0	Misty.	
Bombay	29.80	757.0	29.84	758.0	82.5	28.1	83	SSE	26.0	11.6			10	SE	SSE	0.29	7.4	Overcast	
Poona	27.79	706.0	29.79	756.8	78.2	25.7	78	W					10		SW	0.01	0.3	D. clouds	
Lahore	29.00	736.6	29.73	755.2	86.0	30.0	45	Calm	0.7	0.3			0			0	0	Blue sky	
Belgaum	27.37	695.2	29.93	760.2	72.9	22.7	91	SW	9.0	4.0			9		SW	0.02	0.5	Drizzling	
Bangalore																			
Roorkee	28.83	732.2	29.70	754.4	91.8	33.2	25	Calm	3.4	1.5						0	0		
Agra	29.15	740.4	29.69	754.2	98.7	37.1	16	N								0	0		
Trichinopoly																			
Nagpur	28.77	730.7	29.79	756.8	89.5	31.9	49	Calm	2.5	1.1			2			0	0	D. clouds	
Madras																			
Lucknow	29.36	745.6	29.72	754.9	91.2	32.9	40	NW	1.9	0.8						0	0	Misty	
Allahabad	29.42	747.2	29.72	754.9	89.5	31.9	53	Calm	1.5	0.7			0			0	0	Blue sky	
Patna	29.61	752.2	29.79	756.7	87.0	30.6	68	E	2.1	0.9			2	E	E	0	0		
Hazaribagh	27.79	705.8	29.78	756.3	83.3	28.5	58	NNE	6.6	3.0			0			0	0	Blue sky	
Cuttack	29.79	756.6	29.87	758.7	80.0	26.7	75	NNE	6.4	2.9			6			0	0	D. clouds	
Calcutta (Alipore)	29.83	757.7	29.85	758.3	75.6	24.2	90	S	1.0	0.4			8			0	0	D. clouds	
Goalpara	29.46	748.2	29.85	758.2	76.8	24.9	82	E	5.6	2.5			0			0	0	Blue sky	
Chittagong	29.76	755.9	29.85	758.3	79.9	26.6	89	Calm	4.3	1.9			2			0	0	Blue sky	
Sibsagar	29.57	751.1	29.91	759.6	74.5	23.6	88	ENE	3.4	1.5			7	NW	NW	0.03	0.8	D. clouds	
Rangoon																			
Jubbulpore	28.43	722.1	29.70	754.4	84.5	29.2	67	SW	1.9	0.8						0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.05	560.0	29.91	759.8	38.3	3.5	85	NNW			1		10			0	0		Ab. Dom. Mongini.
Stelvio	22.00	558.9	29.89	759.2	34.2	1.1		WSW			1		5	WSW		0	0		Signora Ernesta Manfredi.
Udine	29.37	746.0	29.78	756.4	64.6	18.1	54	SW	1.8	0.8			8			0	0		Prof. Giovanni Clodig.
Padua	29.67	753.5	29.78	756.3	64.9	18.3	45	NW	3.1	1.4			2	NE		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.59	751.5	29.78	756.4	66.4	19.1	41	S	0.7	0.3			2			0	0		Conte Alm. Da Schio.
Verona	29.55	750.5	29.77	756.1	74.5	23.6	50	SW	6.9	3.1			2	NW		0	0		Dott. B. Bertoncelli.
Bergamo	28.49	723.6	29.80	756.9	63.7	17.6	52	SW			2		5			0	0		Prof. Trionfini Carlo.
Domodossola	28.74	730.0	29.77	756.1	63.0	17.2	52	S			6		1			0	0		Prof. Giuseppe Calza.
Milan	29.30	744.1	29.81	757.1	65.7	18.7	55	W			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.47	748.4	29.81	757.2	63.5	17.5	47	W			4		3			0	0		Prof. Gio. Cantoni.
Moncalieri	28.90	734.0	29.81	757.1	64.2	17.9	40	WSW	3.8	1.7			2			0	0		Prof. P. F. Denza.
Mondovi	27.90	708.6	29.82	757.3	62.1	16.7	35	NNW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.61	752.0	29.82	757.5	67.1	19.5	51	SSW			2		1			0	0		Prof. L. Vassallo.
Genoa	29.63	752.5	29.80	756.8	68.9	20.5	39	SW	4.3	1.9			0			0	0		Prof. G. M. Garibaldi
Piacenza	29.54	750.4	29.80	756.9	64.9	18.3	38	NW	1.8	0.8			3			0	0		Dott. G. Manzi.
Parma	29.53	750.1	29.84	758.0	67.5	19.7	41	ENE			4		1			0	0		Prof. P. Pigorini.
Florence	29.55	750.6	29.81	757.1	68.4	20.2	41	N			2		3	S		0	0		Cav. F. Meucci.
Leghorn	29.7[illegible]	754.4	29.78	756.5	66.7	19.3	47	NW	4.9	2.2			4	SW		0	0		Prof. P. Monte.
Siena	28.59	726.2	29.80	756.8	64.4	18.0	41	E	0	0			8	SW		0	0		Prof. L. Toscani.
Urbino	28.29	718.6	29.85	758.3	58.5	14.7	72	NE			2		7			0	0		Prof. P. Serpieri.
Pesaro	29.78	756.3	29.82	757.5	62.2	16.8	71	NW	0	0			9	NW		0	0		Prof. Luigi Guidi.
Ancona	29.70	754.4	29.81	757.1	64.0	17.8	65	NNW			4		5			0	0		Prof. F. DeBosis.
Grosseto	29.67	753.7	29.78	756.5	70.5	21.4	45	SSW			2		6	S		0	0		Avv. P. Ponticelli.
Rome	29.61	752.2	29.79	756.6	71.6	22.0	47	WSW	3.1	1.4			10			0.047	1.2		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.60	751.9	29.80	756.9	73.4	23.0	57	S			4		7	SW		0.157	4.0		Prof. L. Palmieri.
Lecce	29.51	749.5	29.76	755.8	74.3	23.5	67	W	6.3	2.8			7	SW		0.039	1.0		Prof. C. De Giorgi.
Cosenza	28.98	736.0	29.85?	758.2?	72.1	22.3	71	SE	0	0			6			0.079	2.0		Prof. F. D. Conti.
Cagliari	29.53	750.0	29.72	754.8	69.8	21.0	49	NW			2		8	W		0.012	0.3		Prof. A. Pacinotti.
Riposto, (Sicily)	29.68	753.8	29.72	755.0	74.7	23.7	81	SSE			4		10	SE		1.929	49.0		Prof. F. Cafiero.
Palermo	29.46	748.3	29.71	754.6	77.2	25.1	46	SW	13.7	6.1			7			0	0		Prof. G. Cacciatore.
Caltanissetta	27.59	707.8	29.78	756.4	69.1	20.6	71	SW			2		9	N		0.138	3.5		Prof. A. Pagani.
Syracuse	29.69	754.0	29.76	755.9	73.9	23.3	85	SE			2		10	SW		0.307	7.8		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.26	743.3	29.82	757.4	69.6	20.9	67	WNW	1.3	0.6			8			0.043	1.1		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.76	755.9	29.86	758.4	65.6	18.7	97	ESE	5	2.2			4n			0.64	16.3	Showery	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	28.12	687.1	30.16	766.2	55.0	12.8	73	W	0.4	0.18		2c	1k			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594,2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.00	762.0	30.00	762.0	57.4	14.0		N			4					0.039	1.0		
Groningen	29.87	758.7	29.93	760.1	54.5	12.5		N			1					0	0		
Helder	29.95	760.8	29.95	760.8	54.3	12.4		NNW			4					0.091	2.3		
Hellevoetsluis			29.97	761.2	57.9	14.4	72	NNW			8								
Utrecht	29.91	759.8	29.96	761.0	56.3	13.5	71	N			2		10			0.051	1.3	Overcast	H. v d Brink.

Note.—The originals give the wind-pressure in kilograms per square meter; except Hellevoetsluis by force scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.95	760.7	30.00	762.1	51.1	10.6	72	W	6.5	2.9			0			0	0		
Brönö	29.96	760.9	30.00	761.9	43.5	6.4	59	N	4	2			6			0	0		
Christiania	29.85	758.2	30.00	762.0	48.4	9.1	65	NNW	4	2			10			0	0		
Tromsö	29.86	758.5	29.91	759.6	34.5	1.4	72	SW	4	2			10			0.079	2.0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.95	760.7	30.14	765.5	67.1	19.5	83	ENE	12.5	5.6			6			0.118	3.0		
Campo Major	29.01	736.9	30.02	762.5	70.7	21.5	53	WNW	3.1	1.4			3			0	0		Dr. J. A. Sampaio
Funchal, (Madeira)	30.08	763.9	30.15	765.7	73.9	23.3	59	SW	3.1	1.4			5			0	0		Dr. A. M. R. dos Santos.
Lisbon, Observatory	29.69	754.1	30.04	763.0	69.4	20.8	62	SW	9.8	4.4			6	NW		0	0		Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	30.05	763.2	30.12	765.0	68.0	20.0	80	NNE	7.4	3.3			3			0.094	2.4		The Staff.

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.50	749.2	29.92	759.9	53.6	12.0	75	SE	7	3			10						Astronomical Obs.
Wilna	29.61	752.1	30.03	762.8	52.9	11.6	63	S	2	1			5						Astronomical Obs.
Dorpat	29.69	754.0	29.93	760.2	50.9	10.5	65	WSW	11	5			7						Physical Cabinet.
St. Petersburg	29.72	755.0	29.74	755.4	46.4	8.0	76	WNW	18	8			7						Central Physical Obs.
Knopio	29.41	747.1	29.74	755.4	38.3	3.5	75	WSW	18	8			10					Raining	Ch. Forsten.
Zieff	29.50	749.2	30.14	765.6	50.7	10.4	52	S	9	4			6						Physical Cabinet.
Nikolaiev	30.17	766.4	30.24	768.2	57.6	14.2	39	SE	9	4			0						Kurdakof.
Kertch	30.25	768.3	30.27	768.8	57.9	14.4	59	E	11	5			0						Lagorio.
Moscow	29.43	748.2	30.01	762.3	46.8	8.2	62	S	7	3			8						Meteorological Obs.
Lugan	30.09	764.3	30.30	769.5	50.4	10.2	46	Calm	0	0			4						Meteorological Obs.
Archangel	29.43	747.6	29.45	748.1	32.4	0.2	89	W	22	10			10					Snow; graupel	Ogorodnikof.
Tiflis	28.87	733.4	30.28	769.2	64.2	17.9	53	S	4	2			9						Physical Observatory.
Astrakhan	30.52	775.1	30.43	773.0	48.0	8.9	29	Calm	0	0			0						Sebastianof.
Kasan	29.61	752.2	29.89	759.2	38.5	3.6	46	SW	7	3			10						Physical Cabinet.
Orenburg	30.02	762.4	30.39	771.9	54.5	12.5		E	9	4			5						Tschernischef.
Ekaterinburg	28.73	729.7	29.71	754.5	30.2	— 1.0	56	NW	27	12			5						Meteorological Obs.
Nukuss	30.05	763.3	30.29	769.3	52.5	11.4	56	N	7	3			1						
Kasaly																			Bobrof.
Tashkend	28.62	727.0	30.33	770.3	59.5	15.3	72	N	7	3			10						Michelson.
Barnaul	29.36	745.8	29.87	758.8	57.4	14.1	48	SW	0	0			3						Meteorological Obs.
Yeniseisk	29.61	752.2	29.76	755.9	43.2	6.2	85	SE	4	2			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.84	757.8	29.98	761.4	61.3	16.3	52	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					49.5	9.7	98	Calm	0	0			0						

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Nayeran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.78	705.7	29.97	761.2	66.4	19.1	51	NE	9.7	4.34		0	0			0.188	3.5	Clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.81	757.2	29.89	759.3	80.7	27.1	90	SSW	10.7	4.8		5c	1ks	N		0.768	19.5	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.95	760.7	30.05	763.2	69.6	20.9	75	W	11.0	4.91		0	8		W	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.90	759.5	83.5	28.6	81	SE	4.0	1.80		7s	1k			0.049	1.25	Clear	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.82	757.5	29.86	758.5	38.8	3.8		N			6		2			0	0		
Umea	29.87	758.8	29.93	760.1	46.0	7.8	52	NNE			4		8			0.043	1.1		
Hernosand	29.87	758.6	29.92	759.9	46.4	8.0	86	E			4		8			0	0		
Stockholm	29.77	756.1	29.95	760.6	48.9	9.4	82	SW			2		3			0	0		
Wisby	29.97	761.1	30.02	762.6	47.5	8.6	78	NW			4		3			0	0		
Sub-Series.																			
Upsala	29.87	758.8	29.95	760.7	48.9	9.4	70	SW	3.6	1.6			2			0.002	0.04		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.47	723.1	29.87	758.7	61.9	16.6	48	N			1		1			0	0	Clear	The Observatory.
Zurich	28.28	718.2	29.90	759.5	57.4	14.1	76	W			1		7			0	0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —3.4 mm; Thermometer, +1.3 cent.; Relative Humidity, —20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.99	761.7	70.9	21.6	55	NE	8	3.7			0			0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.03	762.8	76.6	24.8		SW			1		10						B. Stefanidès.
Valona			29.90	759.5	77.4	25.2		SW			2		5			0.006	0.15	Cloudy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.82	757.4	29.94	760.4	83.5	28.6	64	NW			1		1k		SE	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.11	764.8	30.18	766.6	47.8	8.8	77	NW	3	1.3			10						Hon. J. Ferguson.
Brockville, Ontario			30.15	765.8	51	10.6		NE	4	1.8		10c	10s		NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B			30.17	766.3	49	9.4	74	NW	17	7.6		10c	0	W		0.24	6.1	Fair	G. A. Blair.
Charlottetown, P. E. Island			30.12	765.0	57	13.9	53	N	9	4.0		0	5s		Calm	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.98	761.5	30.18	766.6	50.9	10.5	87	E			4		10s			0.210	5.33	Unsettled	James Smith, M. A.
Dalhousie, N. B	30.18	766.6	30.21	767.3				W			2					0.26	6.6	Clearing	H. A. Johnson.
Esquimault, B. C	30.07?	763.8?	30.02?	762.5?	45.3	7.4	100	Calm				8cs	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.25	768.3	42	5.6	81	SW	11	4.9		5cs	2s	W	W	0.26	6.6	Cloudy	J. McWilliams.
Fredericton, N. B	30.15	765.8	30.21	767.3	53.7	12.1	71	NE	4	1.8		c	9ks		W	0.03	0.8	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			30.27	768.8	33	0.6	94	E	4	1.8		5k	5ks	N	N	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.25	742.9	30.03	762.7	62.9	17.0	92	S			1	6ck	0	W		0	0	Cloudy	H. J. Strang, M. A
Granton, Ontario	28.94	735.1	30.02	762.5	60	15.6	94	E			1		Fog			0	0	Foggy	James Grant.
*Halifax, N. S	29.96	761.0	30.10	764.5	57	13.9	87	NW	8	3.6			10n			0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.74	755.4	30.10	764.5	64.1	17.8	83	E			4	10cs	0	E		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.81	757.2	29.84	757.9	53	11.7	90	SW			3		10n			0.07	1.8	Raining	E. Weedon.
*Kingston, Ontario	29.80	756.9	30.17	766.3	53	11.7	92	NE	16	7.2		10cs	Sm'e	Calm	NE	0	0	Cloudy	S. Woods, M. A.
*Montreal, Quebec	29.99	761.7	30.19	766.8	49	9.4	76	NE	11	4.9		8ck	5ks			0.08	2.0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.45	748.0	30.14	765.5	48	8.9	92	NE	14	6.3		5k	5ks	NE	NE	0.23	5.8	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.39	746.5	30.13	765.3	55.7	13.2	74	NE			2	2k	0			0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.37	746.0	30.05	763.3	60	15.6	100	NE	10	4.5			Fog		NE	0	0	Foggy	H. Morgan.
Port Hastings, N. S	30.05	763.3	30.10	764.5	56.8	13.8		W	3	1.3						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.39	746.5	30.02	762.5	61	16.1	94	E	3	1.3		8k	Fog	W		0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.91	759.7	30.24	768.1	47	8.3	77	N	2	0.9		5c	2n		N	0.52	13.2	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.76	755.9	30.23	767.8	47	8.3	73	E	4	1.8		8ck	0	W		Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B	30.00	762.0	30.17	766.3	55	12.8	93	N	3	1.3			10ks			0.07	1.8		G. Murdock, C. E.
*Saugeen, Ontario	29.34	745.2	30.03	762.7	57	13.9	95	E	5	2.2			10n			0.02	0.5	Cloudy	K. Stewart.
Stayner, Ontario			30.07	763.8	58	14.4	88	E	10	4.5			10n		E	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.76	730.5	30.01	762.2	60.2	15.7	98	SE	10	4.5			Fog			0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.03	762.7	30.06	763.5	61	16.1	60	NW	4	1.8		2c	0			0	0	Clear	D. C. Hill.
*Toronto, Ontario	29.72	754.9	30.10	764.5	59	15.0	85	NE	6	2.7			8n		Calm	0	0	Cloudy	Magnetic Observatory.
Windsor, N S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					54.0	12.2	90	SW				10k	10s			0.02	0.5	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.88	758.9	30.11	764.8	57	13.9	80	Calm	0	0		0	0			0	0	Clear.	
Alpena, Michigan	29.43	747.5	30.08	764.0	52	11.1	93	NE	8	3.6			10n		NE	0.78	19.8	Light rain	
Atlantic City, New Jersey	30.13	765.3	30.15	765.8	64	17.8	94	SE	4	1.8		0	0			0	0	Clear	
Augusta, Georgia	29.80	756.9	29.98	761.5	72	22.2	80	E	13	5.8			10s		E	0.06	1.5	Cloudy	
Baltimore, Maryland	30.11	764.8	30.16	766.1	63	17.2	88	N	1	0.4			Fog		Calm	0	0	Foggy	
Barnegat, New Jersey	30.13	765.3	30.15	765.8	61	16.1	94	NE	3	1.3		2ck	0	W		0	0	Clear.	
Bismarck, Dakota	28.19	716.0	29.87	758.7	42	5.6	83	S	9	4.0			10s		S	0.26	6.6	Cloudy	
Boise City, Idaho	27.26	692.4	29.95	760.7	36	2.2	70	Calm	0	0		0	0			0.01	0.3	Clear	
Boston, Massachusetts	29.95	760.7	30.10	764.5	62	16.7	77	W	5	2.2		0	Haze			0	0	Clear	
Brackettville, Texas	28.70	729.0	29.70	754.4	70	21.1	66	Calm	0	0		0	0			0	0	Clear.	
Breckenridge, Minnesota	28.97	735.8	29.97	761.2	46	7.8	69	SE	8	3.6			10s		SW	0	0	Cloudy	
Brownsville, Texas	29.79	756.7	29.85	758.2	75	23.9	76	Calm	0	0		Haze	0	Calm		0	0	Clear.	
Buffalo, New York	29.35	745.5	30.04	763.0	59	15.0	81	NE	4	1.8		1c	Sm'e	Calm	Calm	0	0	Fair	
Burlington, Vermont	29.92	760.0	30.18	766.6	58	14.4	88	N	10	4.5			10s		N	0	0	Cloudy	
Cairo, Illinois	29.60	751.8	29.98	761.5	68	20.0	84	Calm	0	0		8ck	0	S		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.71	678.4	30.20	767.1	55	12.8	56	W				0	0			0	0	Clear.	
Campo, California	27.35	694.7	29.92	760.0	40	4.4	48	NE	1	0.4		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.97	761.2	29.97	761.2	71	21.7	90	NE	12	5.4		0	2ks		NE	0	0	Fair	
Cape Henry, Virginia	30.07	763.8	30.09	764.3	70	21.1	84	NE	15	6.7		2ck	0	NE		0	0	Clear	
Cape Lookout, N. Carolina	30.00	762.0	30.01	762.2	72	22.2	95	NE	19	8.5			10s		NE	0	0	Cloudy	
Cape May, New Jersey	30.12	765.0	30.15	765.8	65	18.3	90	E	4	1.8		5ck	0	NW		0	0	Fair	
Charleston, South Carolina	29.93	760.2	29.99	761.7	73	22.8	90	NE	14	6.3			10s		NE	0.10	2.5	Threatening	
Cheyenne, Wyoming	23.89	606.8	29.83	757.7	43	6.1	35	SW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.25	742.9	29.91	759.7	67	19.4	90	NE	3	1.3		10k	0	Calm		0	0	Cloudy	
Cincinnati, Ohio	29.29	744.0	29.91	759.7	62	16.7	83	SE	2	0.9		0	Fog		SE	0	0	Clear	
Cleveland, Ohio	29.32	744.7	30.03	762.7	61	16.1	71	Calm	6	0		0	0			0	0	Clear	
Concho, Texas	27.9	709.4	29.55	750.6	67	19.4	64	NW	4	1.8		9	0			0	0	Clear	
Corsicana, Texas	29.39	746.5	29.85	758.2	66	18.9	78	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.33	745.0	29.95	760.7	62	16.7	88	Calm	0	0			10s		Calm	0.11	2.8	Cloudy	
Denison, Texas	29.09	738.9	29.86	758.4	67	19.4	78	SE	4	1.8		0	0			0	0	Clear.	
Denver, Colorado	24.64	625.8	29.86	758.4	48	8.9	29	S	6	2.7		0	0			0	0	Clear	
Detroit, Michigan	29.31	744.5	29.96	761.0	65	18.3	90	NE	5	2.2			Fog		Calm	0	0	Foggy	
Dodge City, Kansas	27.21	691.1	29.40	746.7	62	16.7	88	SE	12	5.4		2k	0	SE		0	0	Clear.	
Dubuque, Iowa	29.25	742.9	29.93	760.2	60	15.6	88	SE	4	1.8			10s		Calm	0.85	21.6	Cloudy	
Duluth, Minnesota	29.42	747.3	30.10	764.5	48	8.9	62	E	12	5.4			10ks		E	0	0	Threatening	
Eagle Pass, Texas	29.05	737.9	29.77	756.1	70	21.1	66	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	30.08	764.0	30.14	765.5	57	13.9	87	NE	8	3.6			10s		NE	0	0	Cloudy	
Erie, Pennsylvania	29.32	744.7	30.02	762.5	62	16.7	66	SE	6	2.7		2c	Sm'e			0	0	Fair	
Escanaba, Michigan	29.41	747.0	30.07	763.8	50	10.0	93	NE	18	8.0			10n		NE	0.35	8.9	Light rain	
Florence, Arizona	28.30	718.8	29.90	759.4	74	23.3	43	W				5ck	0	Calm		0	0	Fair	
Fort Bayard, New Mexico	24.06	611.1	30.06	763.5	52	11.1	53	NW	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.50	647.7			50	10.0	72	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.32	744.7	29.84	757.9	64	17.8	89	Calm	0	0		0	2ks		Calm	0	0	Clear	
Fort Griffin, Texas	28.57	725.7	29.80	756.9	66	18.9	84	SE	4	1.8		0	0			0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.61	726.7	29.66	753.4	67	19.4	68	S	5	2.2		2k	2s	W	W	0.07	1.8	Fair	
Fort Sully, Dakota	28.24	717.3	29.91	759.7	42	5.6	100	E	4	1.8			10s		Calm	0.04	1.0	Cloudy	
Galveston, Texas	29.78	756.4	29.82	757.4	75	23.9	85	NE	8	3.6		Haze	0	Calm		0	0	Clear	
Grand Haven, Michigan	29.31	744.5	29.94	760.5	60	15.6	91	E	10	4.5			10s		Calm	0	0	Cloudy	
Indianapolis, Indiana	29.19	741.4	29.95	760.7	63	17.2	83	SE	2	0.9		8c	Sm'e	Calm		0	0	Fair	
Indianola, Texas	29.83	757.7	29.85	758.2	77	25.0	86	NW	6	2.7		0	Haze		Calm	0	0	Clear.	
Jacksboro, Texas																			
Jacksonville, Florida	29.82	757.4	29.85	758.2	74	23.3	85	E	12	5.4			10s		SE	1.99	50.5	Threatening	
Keokuk, Iowa	29.29	744.0	29.88	758.9	67	19.4	94	NE	2	0.9			10n		Calm	0.39	9.9	Light rain	
Key West, Florida	29.80	756.9	29.83	757.7	83.0	28.3	79	S	15	6.7		2c	1ks;hz	Calm	Calm	0.35	8.9	Cloudy	
Kittyhawk, North Carolina	30.06	763.5	30.08	764.0	71	21.7	100	NE	19	8.5		5k	0	E		0	0	Fair	
Knoxville, Tennessee	29.12	739.6	30.11	764.8	62	16.7	67	N	4	1.8		0	0			0	0	Clear	
La Crosse, Wisconsin	29.23	742.4	29.96	761.0	51	10.6	93	NE	7	3.1			10s		NE	0.19	4.8	Cloudy	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	55	12.8	50	Calm	0	0		2c	0	Calm		0	0	Clear.	
Laredo, Texas					73	22.8	71	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.04	737.6	29.85	758.2	66	18.9	90	SE	4	1.8			10s		Calm	0.09	2.3	Cloudy	
Los Angeles, California	29.56	750.8	29.89	759.2	60	15.6	88	N	3	1.3			Fog			0	0	Foggy	
Louisville, Kentucky	29.42	747.3	29.95	761.0	66	18.9	78	SE	6	2.7		0	Fog		SE	0	0	Foggy	
Lynchburg, Virginia	29.45	748.0	30.11	764.8	67	19.4	68	NE	1	0.4		2c	0	N		0	0	Fair	
Maricopa Wells, Arizona					62	16.7	57	E				0	2s		Calm	0	0	Fair	
Marquette, Michigan	29.39	746.5	30.09	764.3	52	11.1	72	NE	4	1.8			10s		Calm	0	0	Cloudy	
Mason, Texas	28.24	717.3	29.95	760.7	65	18.3	68	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.62	752.3	29.92	760.0	69	20.6	84	E	5	2.2		0	0			Inap	Inap.	Clear	
Milwaukee, Wisconsin	29.32	744.7	30.00	762.0	58	14.4	93	N	5	2.2			10s		Calm	0.03	0.8	Cloudy	
Mobile, Alabama	29.69	751.8	29.64	752.8	70	21.1	97	N	15	6.7			10n		Calm	0.38	9.7	Heavy rain	
Montgomery, Alabama	29.58	751.3	29.81	757.2	72	22.2	85	NE	14	6.3			10n		E	Inap.	Inap.	Light rain	
Morgantown, West Virginia	29.02	737.1	30.07	763.8	55	12.8	74	Calm	0	0		1ck	Fog	SW		0	0	Fair	
Mt. Washington, N. H.	24.04	610.6	30.40	772.1	49	9.4	85	NW	22	9.8		5c	Haze	NW	NW	0	0	Fair	
Nashville, Tennessee	29.46	748.3	29.98	761.5	66	18.9	84	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.02	762.5	30.13	765.3	64	17.8	89	SW	3	1.3		Haze	Fog		Calm	0	0	Fair	
New London, Connecticut	30.11	764.8	30.15	765.8	64	17.8	89	W	2	0.9		2k	2s	W	Calm	0	0	Fair	
New Orleans, Louisiana	29.61	752.1	29.66	753.4	74	23.3	76	N	20	8.9		2c;k	4s	W; NE	Calm	0	0	Fair	
Newport, Rhode Island	30.09	764.3	30.14	765.5	64	17.8	88	SW	8	3.6		1k	0	SW		0	0	Clear.	
New York, New York	29.98	761.5	30.16	766.1	61	16.1	94	SW	5	2.2		0	Fog			0	0	Clear	
Norfolk, Virginia	30.05	763.3	30.10	764.5	68	20.0	97	NE	6	2.7		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	26.93	684.0	29.42	747.3	55	12.8	97	E	6	2.7			10n		Calm	Inap.	Inap.	Light rain	
Olympia, Washington Ter.	30.09	764.3	30.13	765.3	41	5.0	91	Calm	0	0			10n		Calm	0.36	9.1	Light rain	
Omaha, Nebraska	28.81	731.8	29.86	758.4	57	13.9	100	N	5	2.2			Fog		Calm	0	0	Foggy	
Oswego, New York	29.77	756.1	30.09	764.3	63	17.2	83	Calm	0			0	Sm'e			0	0	Clear.	
Pembina, Dakota	29.36	745.7	30.21	767.3	36.5	2.5	90	NE	4	1.8			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.11	764.8	30.16	766.1	58	14.4	94	SW	3	1.3			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					61	16.1	55	Calm				5k	0	SW		0	0	Fair	
Pike's Peak, Colorado	17.86	453.6	30.07	763.8	27	— 2.8	38	W	13	5.8		0	0			0	0	Clear	
Pioche, Nevada	23.99	609.3	29.76	755.9	54	12.2	21	S	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.25	742.9	30.05	763.3	55	12.8	90	E	1	0.4			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.32	744.7	29.96	761.0	65	18.3	89	NE	2	0.9			Fog		Calm	0	0	Foggy	
Portland, Maine	30.04	763.0	30.09	764.3	61	16.1	82	N	4	1.8		Haze	Haze			0	0	Hazy	
Portland, Oregon	30.10	764.5	30.20	767.1	48	8.9	92	S	1	0.4			8ks		S	1.16	29.5	Cloudy	
Prescott, Arizona	24.77	629.2	30.13	765.3	46	7.8	48	Calm				0	0			0	0	Clear.	
Punta Rassa, Florida	29.80	756.9	29.81	757.2	82	27.8	78	S	24	10.7		8cs	0	Calm		0.52	13.2	Cloudy	
Red Bluff, California	29.72	754.9	30.08	764.0	53	11.7	36	NW	15	6.7		0	0			0	0	Clear.	
Rochester, New York	29.46	748.3	30.06	763.5	61	16.1	94	NE	7	3.1			Fog		Calm	0	0	Foggy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.68	753.9	30.26	768.6	42	5.6	91	S	1	0.4			10n		Calm	0.24	6.1	Light rain	
Sacramento, California	29.94	760.5	30.02	762.5	50	10.0	58	N	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.39	746.5	29.94	760.5	66	18.9	84	S	2	0.9		4k	Fog	Calm		0	0	Fair	
St. Marks, Florida	29.66	753.4	29.68	753.9	73	22.8	95	E	20	8.9			10s		SE	1.44	36.6	Cloudy	
St. Paul, Minnesota	29.13	739.9	29.96	761.0	48	8.9	85	NE	7	3.1			10s		Calm	Inap.	Inap.	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.61	650.5	29.94	760.5	50	10.0	32	NW	12	5.4		0	0			0	0	Clear	
San Antonio, Texas	29.15	740.4	29.71	754.6	68	20.0	79	NE	1	0.4		0	0			0	0	Clear	
San Diego, California	29.84	757.9	29.91	759.7	61	16.1	88	Calm	0	0			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.32	744.7	29.97	761.2	69	20.6	60	S	8	3.6		4ck	Sm'e	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.13	765.3	30.15	765.8	62	16.7	94	W	6	2.7		0	Fog		W	0	0	Fair	
San Francisco, California	30.00	762.0	30.07	763.8	54	12.2	67	W	4	1.8		0	0			0	0	Clear	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	49	9.4	50	N	7	3.1		0	Haze			0	0	Fair	
Savannah, Georgia	29.85	758.2	29.94	760.5	73	22.8	95	E	17	7.6			10n		E	0.29	7.4	Light rain	
Shreveport, Louisiana	29.65	753.1	29.86	758.4	70	21.1	80	N	3	1.3		0	0			0	0	Clear	
Smithville, North Carolina	30.00	762.0	30.04	763.0	68	20.0	90	N	12	5.4		8c	0	W		0.01	0.3	Cloudy	
Springfield, Massachusetts	29.94	760.5	30.07	763.8	57	13.9	93	S	1	0.4			Fog		Calm	0	0	Foggy	
Stanwix, Arizona					62	16.7	44	SW				0	0			0	0	Clear.	
Stockton, Texas					72	22.2	67	NW	4	1.8		0	2s		Calm	0	0	Fair	
Thatcher's Island, Mass	30.05	763.3	30.10	764.5	58	14.4	87	SW	12	5.4		0	0			0	0	Smoky	
Toledo, Ohio	29.31	744.5	29.97	761.2	66	18.9	94	Calm	0	0			Fog		Calm	0	0	Foggy	
Tucson, Arizona	27.53	699.2	30.08	764.0	66	18.9	73	SW				0	2ks		SW	0	0	Fair	
Tybee Island, Georgia	29.90	759.4	29.93	760.2	74	23.3	95	NE	24	10.7			10n		E	0.63	16.0	Light rain	
Umatilla, Oregon	29.80	756.9	30.31	769.9	41	5.0	83	W	4	1.8		0	1s		Calm	0.09	2.3	Clear	
Vicksburg, Mississippi	29.60	751.8	29.86	758.4	67	19.4	90	NE	6	2.7		0	0			0	0	Clear	
Virginia City, Montana	24.16	613.6	29.64	752.8	29	— 1.7	78	W	6	2.7		0	0			0.18	4.6	Clear	
Visalia, California	29.63	752.6	30.00	762.0	55	12.8	62	NW	5	2.2		0	0			0	0	Clear.	
Washington, D. C.	30.04	763.0	30.16	766.1	62	16.7	91	Calm	0	0			10s,smc		S	0	0	Cloudy	
Wickenburg, Arizona					55	12.8	34	SE				0	0			0	0	Clear	
Wilmington, N. Carolina	29.96	761.0	30.04	763.0	67	19.4	90	NE	7	3.1		5c	0	W		0	0	Fair	
Winnemucca, Nevada	25.66	651.8	30.02	762.5	42	5.6	49	SE	8	3.6		10k	0	SW		0	0	Cloudy	
Wood's Holl, Mass	30.10	764.5	30.15	765.8	67	19.4	84	SW	7	3.1		0	0			0	0	Clear	
Yankton, Dakota	28.66	728.0	29.94	760.5	51	10.6	79	E	6	2.7			10s		Calm	0	0	Cloudy	
Yuma, Arizona	29.65	753.1	29.82	757.4	61	16.1	33	S	2	0.9		0	0			0	0	Clear.	
SUB-SERIES.																			
York Factory, B. A.	30.12	765.0	30.17	766.3	31.0	— 0.6	95	W	15	6.7		2k	0	SW		0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.82	757.4	29.84	757.9	81	27.2	91	S	3.6	1.6		8c	4ks	Calm	SW	0.73	18.5	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	81	27.2	83	SE	4	1.8		8c	2s	SE		0	0		James Gall.
San Iago de Cuba, W. I.	29.96	761.0	29.97	761.2	84	28.9	75	S	8	3.6		8c	1ks		SE	0	0	Fine	T. W. Beattie.
Navassa, W. I.	29.89	759.2	29.97	761.2	84	28.9		SE			1					0	0	Cloudy	F. M Everett.
St. Thomas, W. I.					84	28.9	79	SE				4c	4ks	E		0	0	Fair	G. O. Gellich
Pt-a-Pitre, G'd'loupe, W. I.	29.89	759.2	29.91	759.7	80	26.7	86	SE				5k	2ks		SE				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.09	764.3	84	28.9	75	E			2	3c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.28	642.1			66.8	19.3	77	Calm			0	2cs;k	1ks			0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.8 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.: Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.86 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.05	763.3	51	10.6	46	7.8	77	W	3	1.3			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	29.70	754.4			74	23.3	90	NE	25	11.2			10		NW	1.94	49.3			Raining	
Navy Yard, Portsmouth, N.H	30.15	765.8	70	21.1	59	15.0	82	NE	1	0.4						0	0			Smoky	
Naval Hospital, Yokohama, Japan	29.80	756.9	70.5	21.4	66.5	19.2	94	Calm			0		1k		SW	0.32	8.1			Fair	
Adams, Montevideo, Uruguay	30.19	766 8	67	19.4	55	12.8	74	SE			1		4		NE	0	0	Light	SE	D. clouds	
Alert, N. 39° 41′ E. 139° 23′	29.89†	759 2†	68	20.0	68	20.0	84	Var.			6–7		6		SE			Moderate.	E	Squally	
Alliance, Constantinople, Turkey.	30.10	764.5	71	21.7	65	18.3	100	NNE			1		2		Calm					Clear	
Ashuelot, Che-foo, China	30.09	764.3	70	21.1	60	15.6	82	NNW			2		0					Smooth		Blue sky	
Canonicus, New Orleans, La	29.73	755.1	54	12.2	75	23.9	81	NNE			6		10		NE					Cloudy	
Colorado, New York, N. Y	30.24	768.1	68	20.0	65	18.3	84	WSW	4	1.8			6		WSW	0	0			Foggy	
Despatch, Beikos Bay, Bosphorus	30.16	766.1	73	22.8	68	20.0	70	NNE			2		3		Calm			Smooth		Clear	
Franklin, Norfolk, Va	30.16	766.1	67	19.4	71	21.7	100	NE	5	2.2			2		NE	0	0			Clear	
Frolic, Barbados, W. I	30.18	766.6	85	29.4	88	31.1	92	ESE			2		4k		NNW	0	0	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.99‡	761.7‡			75	23.9	95	S			0–1		8		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 4° 00′, E. 100° 05′	29.91	759.7			87	30.6	84	Calm			0		2			0	0	Smooth		Hazy	
Lackawana, Esquimault, B. C	30.12	765.0			49	9.4	85	Calm			0		10		NW			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.97	761.2	77	25.0	78	25.6	65	W			3		6		W	0	0	Smooth		D. clouds	
Michigan, Erie, Pa	29.55	750.6	72	22.2	69	20.6	61	S			2		0							Clear	
Monocacy, Hakodadi, Japan	29.94	760.5	68	20.0	67	19.4	74	ESE			4–6		8		ESE	0	0	Smooth		D. clouds	
Monongahela, N. 35° 23′, W. 63° 26′	30.17	766.3	76	24.4	76	24.4	73	ESE			5–6		ck			Light	Light	Rough	S&E	D. clouds	
New Hampshire, Port Royal, S. C	30.13	765.3			74	23.3	90	NE	23	10.3			10		NE	0.8	20.			Showery	
Omaha, Valparaiso, Chili	30.08	764.0	62.5	16.9	59	15.0	94	NNE	5	2.2			10		N	0.02	0.5	Moderate.	N	Cloudy	
Onward, Callao, Peru	30.10	764.5	70	21.1	67	19.4	92	SSE			1		10					Long	W	Misty	
Ossipee, New York, N. Y	30.29	769.4	69	20.6	64	17.8	89	WNW			1–2		2		WNW					Foggy	
Palos, Poo-to, China	30.10	764.5	70	21.1	69	20.6	65	NNW			2–3		3		N&W	0	0	Light	S&E	Clear	
Pensacola, Mare Island, Cal	30.14	765.5			62	16.7	45	SW			1		0			0	0			Clear	
Plymouth, Lyna Haven Bay	30.40	772.1	75	23.9	70	21.1	95	NNE			2		3		E			Light	N&E	Clear	
Ranger, Nagasaki, Japan	30.02	762.5			67	19.4	60	WSW			1–2		6		Calm	0	0			Cloudy	
Rio Bravo, Brownsville, Texas	29.77	756.1			72	22.2	95	SW			1		0							Blue sky	
Santee, Annapolis, Md	30.23	767.8	70	21.1	66	18.9	89	NW			2		9		NE	0	0			Cloudy	
St. Louis, League Island, Pa	30.08	764.0	59	15.0	59	15.0	94	NE			2		10			0	0			Dense fog	
Tennessee, Yokohama, Japan	29.96	761.0	72	22.2	70	21.1	100	S	2	0.9			3		S	0.22	5.6	Smooth		Hazy	
Trenton, Marseilles, France	29.90	759.4	72	22.2	71	21.7	62	WNW	3	1.3			0			0	0			Blue sky	
Vandalia, Smyrna, Turkey	29.98	761.5	77	25.0	77	25.0	69	W			3		6		Calm					D. clouds	
Wabash, Boston, Mass	30.11	764.8	64	17.8	63	17.2	78	WSW	4	1.8			0			0	0			Blue sky	
Wyoming, Washington, D. C	30.40†	772.1†	65	18.3	66	18.9		E			1		10							Misty	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 36° 08′, E. 141° 17′			30 03*	762.7*	70	21.1	100	SSE			2		4		SSE	Small	SSE	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 38° 01′, E. 153° 04′			30.24†	768.1†	66	18.9		ENE			8		8		ENE	Rough	E to NE	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitsbury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Glendell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 24° 03′, E. 118° 15′			*30.17	*766.3	78	25.6	100	NE			5		k		NE	Smooth		D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 32°, W. 136°			30.09	764.3	68	20.0	84	Var.			1–2		6		WSW	Smooth		Drizzling	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 49° 38′, W. 3° 40′			30.13	765.8	66.0	18.9	74	Calm			0		10		S	Tranq'l	W	Overcast	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 48° 44′, W. 44° 03′			29.54*	750.3*	55	12.8	??	WSW			7		6		W	Heavy	WSW	Hazy	Captain Shackelford.
S. S. Indiana, N. 47° 06′, W. 46° 55′			29.98†	761.5†	54	12.2		WNW			7		4		NW	Heavy	W	Clear	Captain Sargent.
S. S. Ohio, Mersey River.			30.06	763.5	62	16.7	72	Calm			0		0						Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.96	761.0	72	22.2	100	NE	9	4.0			10n		NE			Light rain	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 3, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.96	760.9	74.8	23.8	58	Calm			0		1			0	0	Very Fair	Michel.
Algiers			29.89	759.3	71.6	22.0	32	Calm			0		10			0	0	Covered	Peter.
La Calle			29.92	760.0	75.2	24.0	75	NW			2		5			0.276	7.0	Cloudy	Fleury.
Tunis			29.91	759.7	76.6	24.8	44	NW			4		4			0	0	Cloudy	Jacques.
Sfax			29.96	760.9	77.0	25.0		E			2		8			0	0	Very cloudy	Husson.
Saida			29.95	760.7	66.4	19.1		S			4		2			0	0	Fair	Millot.
Tebessa			29.92	760.0				NW			2		2			0	0	Fair	Bourgeois.
Geriville			29.94	760.4	58.6	14.8	60	NNW			2		5			0	0	Cloudy	Lemaillot.
Laghouat			29.99	761.7	68.0	20.0	55	Calm			0		4			0	0	Cloudy	François.
Biskra			29.90	759.5	79.9	26.6	43	NW			1		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.22	742.1	29.87	758.7	61.2	16.2	70	SW			3		4			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.07	738.3	29.84	757.8	52.2	11.2	95	WSW			1		10			0.358	9.1		Dr. Wierzbiski.
Eperies	28.88	733.6	29.75	755.7	53.1	11.7	96	Calm			0		10			0.280	7.10		Julius Mikolik.
Gratz	28.58	725.8	29.81	757.1	58.3	14.6	76	SW			2		3			0.551	14.0		Andreas Rosphi.
Hermannstadt	28.34	719.8	29.74	755.3	56.8	13.8	85	SE			1		10			0.106	2.70	Raining	Prof. Reissenberger.
Kremsmünster	28.49	723.6	29.82	757.3	54.7	12.6	82	Calm			0		10			0	0		Prof. C. Wagner.
Lemberg	28.79	731.3	29.76	756.0	56.1	13.4	82	NE			1		8			0.012	0.3		Dr. T. Stanecki.
Pola	29.64	752.9	29.75	755.7	66.6	19.2	56	WNW			2		2k8			0	0		I.R.Hydrographic Office
Szathmar																			Johann Tamas, S. J.
Szegedin	29.50	749.2	29.77	756.2	56.1	13.4	85	Calm			0		10			0	0		Karl Stancel.
Trieste	29.08	753.8	29.78	756.4	68.5	20 3	45	E			1		0			0	0	Clear	P. Rusin.
Vienna	29.13	740.0	29.82	757.5	56.7	13.7	96	WNW			2		9			0.031	0.8		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or, in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.43	722.0	29.98	760.2	52.5	11.4	62	NNW			2		8			0	0		Royal Observatory.
Brussels	29.76	755.8	29.96	760.9	52.3	11.3	80	NW			4		10		NE	0	0		
Furnes	29.91	759.0	29.33	760.2	58.1	14.5	77	NNE			4		8			0.012	0.3		
Maeseyck	29.81	757.2	29.94	760.5	53.2	11.8	88	NW			2		10			0.008	0.2		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.92	760.0	30.02	762.5	52.3	11.3		S	13	5.8			9			0	0	Hazy	W. Boswell.
Ardrossan	29.94	760.5	29.96	761.0	60	15.6		SE			1		3					Foggy	William McNeil.
Armagh, Observatory			29.95	760.7	59.2	15.1		S	13	5.8			8					Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.00	762.0	61.2	16.2		SE	10	4.5			1					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			29.92	760.0	59.8	15 4		SE			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.63	752.6	30.05	762.7	46.7	8.2		NE			1		10			0	0	Misty	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	85.0	29.4		NE			2		2					D. clouds	Pvt. G. W. Roberts, A. H.C.
Cambridge, Observatory			30.02	762.5	61.0	16.1		N			1		5					D. clouds	H. Todd.
Cardington			30.03	762.7	56.0	13.3		E			1		2					Blue sky	John McLaren.
Chatham, School M. E.	29.88	758.9	30.01	762.2	58.2	14.6		NE			2		3					Hazy	Lt. W. G. Morris, R. E.
Dartmoor	28.53	724.6	29.99	761.7	56.0	13.3		E			4		3					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.92	760.0	29.95	760.7	59	15.0		SSW			4		3					D. clouds	J. Mac Gowan.
Dover	29.96	761.0	29.98	761.5	58	14.4		NNE			2		7					Gloomy	J. Costello.
Eccles, (near Manchester)			29.99	761.7	60.7	15.9		SE	0.2	0.1								Blue sky	Thomas Mackereth.
Falmouth, Observatory	29.73	755.1	29.96	761.0	58.4	14.7		ESE			5		0					Blue sky	The Staff.
Fort Napier, (Natal)	27.74	704.6	29.95	760.7	73.3	22.9		SE			2		9					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.91	759.7	84	28.9		W			2		4					D. clouds	
Galway, Queen's College			29.88*	758.9	57	13.9		E			1		5					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.89	759.2	29.93	760.2	75.3	24.1		SW			4		1					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.76	755.9	29.97	761.2	54.9	12.7		NNE			1							Hazy	D. G. Maclean.
Great Yarmouth	30.01	762.2	30.01	762.2	56	13.3		NE			2		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.83	757.7	30.00	762.0	58.9	14.9		NE			1		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.74	755.4	29.96	761.0	59	15.0		ESE			2		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			29.93	760.2	61	16.1		SE			4		2			0	0	D. clouds	M. P. Moyle.
Holyhead	29.94	760.5	30.00	762.0	59	15.0		SSW			3		1					Blue sky	John Tilston.
Jersey	29.70	754.4	29.99	761.7	60.2	15.7		ESE			2		0					Blue sky	J. Fisher.
Kew, Observatory			30.01	762.2	56.6	13.7		NE	7	3.1								Hazy	The Staff.
Kingstown	29.94	760.5	29.97	761.2	58	14.4		SE			4		4					D. clouds	George Mitchell.
Leicester, Museum			30.02	762.5	57.0	13.9		Calm			0		0					Hazy	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.81	757.2	29.88	758.9	73.2	22.9		NW			2		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.82	757.4	29.91	759.7	58	14.4		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.87	758.7	85.2	29.6		SW			1		8					Gloomy	C. S. Duncombe.
Nottingham, Observatory	29.84	757.9	30.04	763.0	56.7	13.7		SE			1		0			0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.48	748.8	29.99	761.7	61.2	16.2		ENE			1		10					Hazy	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.01	762.2	56	13.3		N			1		1					Blue sky	F. Lucas.
Plymouth	29.89	759.2	29.97	761.2	60.4	15.8		SE			4		5					D. clouds	John Merrifield.
Roche's Point	29.88	758.9	29.92	760.0															W. Kennedy.
Saint Ann's Head	29.80	756.9	29.96	761.0	59	15.0		ESE			3		2					Blue sky	John C. Walker.
Sandwick Manse, (Orkneys)			29.92	760.0	54.5	12 5		S	20	8.9			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.84	757.9	72.2	22.3		Calm			0		9			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.80	756.9	30.04	763.0	47.6	8.7		Calm			0		6			0	0	Foggy	W. F. Cooper.
Silloth Rectory	29.96	761.0	29.99	761.7	62.4	16.9	65	Calm			0		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					55.1	12.8		NE			0								Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.83	757.7	58	14.4		SSW			5		8					D. clouds	John Smith.
Stratfield Turgiss	29.80	756.9	30.02	762.5	56.9	13.8		SE			1		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.88	758.9	59	15.0		SSE			2		7					Hazy	John Trotter.
Truro, Royal Institution			29.96	761.0	64	17.8		SE			6		2					D. clouds	W. Newcombe.
Valencia, Observatory			29.86	758.4	61.7	16.5		SSE	28	12.5			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		S			3		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.12	765.0	30.16	766.1	67.9	19.9	63	S	30	13.4		2	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.50	774.7	53.0	11.7	82	Calm			0		10n			0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.02	762.5	51.0	10.6		E			2					0	0	Hazy	Andrew Gibb.
Mauritius, Observatory	29.95	760.7	30.14	765.6	71.7	22.1	51	SE	26.5	11.8		4	1	W		0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.41	772.4	30.50	774.7	48.3	9.1	95	Calm	0	0			1			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.80	756.9	56	13.3		S			4		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.92	760.0	51	10.6		S			7		10						Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria, N. 40° 35′, W. 72° 30′			30.07	763.8	65	18.3		E			1		6		5*	SE	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 46° 30′, W. 40° 45′			30.04	763.0	55	12.8		W			4		5		4	W	D. clouds	Capt. J. E. Mouland.
Ship Camperdown																		Capt. A. T. Miller.
Brig Catherine																		Capt. Adam Smith.
Barque Celeste																		Capt. D. F. McKechnie
S. S. Hibernia																		Capt. W. R. Cato.
Barque Maroon																		Capt. A. T. Brown.
Ship Mikado																		Capt. C. C. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 28′			29.60	751.8	49	9.4		W			7		5		N	8	WSW	Raining	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 44° 20′, W. 44° 20′			30.12	765.0	60	15.6		NE			3		1			1	NNW; SW	Blue sky	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.24	666.5			70.7	21.5	92	SE			1		10s;d		S	0	0	Thunder	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.01	762.3	30.06	763.5	50.7	11.2	64	ENE			4		8						
Fanöe	30.04	763.0	30.06	763.5	52.2	11.2	60	E			4		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	28.79	731.3	28.84	732.4	46.6	8.1	98	S			6		10					Raining	
Thorshavn, (Faröe)	29.64	752.9	29.68	753.8	54.9	12.7	83	SSE			6		10					Raining	
Vestervig	29.89	759.2	30.06	763.5	48.6	9.2	84	NE			2		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.48	748.8	30.03	762.8	59.0	15	18	NE			2		5		SW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.81	757.2	29.92	759.9	57.2	14.0	86	N			2		2		S	0	0	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	29.74	755.5	29.82	757.5	63.7	17.6	39	N			4		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.38	746.2	29.95	760.6	53.8	12.1	74	NNE			2		10		NNE	0.028	0.7	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.76	755.9	29.92	759.9	59.0	15.0	65	E	2.0	0.9					NE	0	0		Albert Cheux.
Beauvais	29.69	754.2	29.98	761.4	57.2	14	56	ENE			2		8			0	0	Very cloudy	Normal School.
Besançon	29.62	737.0	29.90	759.5	55.9	12.8	74	E			2		5		S	0	0	Cloudy	Normal School.
Bourg-en-Bresse	29.08	738.7	30.00	762.0	50.0	10	86	N			2		10			0	0	Foggy	Normal School.
Bourges, Normal School	29.37	746.0	29.92	759.9	55 9	13.3	64	NNE			2		5		WNW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.2	29.83	757.7	67.8	19.9	61	SE			3		0			0	0		The Staff.
Carcassonne, Normal School	29.45	748.1	29.85	758.3	68.4	20.2	77	W			4		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.32	744.8	29.88	758.9	60.3	15.7	62	NW			2		9		SE	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.65	753.0	29.97	761.1	54.7	12.6	76	N			3		10n		N	0.187	2.2	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.54	724.9	29.89	759.2	53.6	12.0	67	N			1		8		N	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.06	738.0	29.93	760.3	54.7	12.6	81	NW			2		5ck;n			0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.71	729.3	29.85	758.3	61.3	16.3	40	NW			4		5		NW	0	0	½ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.73	755.2	29.95	760.7	63.7	17.6	50	NE			1		2		NE	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.66	753.4	29.97	761.2	53.8	12.1	69	NE			2		2		NE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.99	736.3	29.91	759.6	53.1	11.7	76	NNW			1		5		W	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.84	757.8	29.93	760 3	64.4	18.0	46	ESE			2		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.26	743.3	29.98	761.4	59.4	15.2	94						10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.80	731.6	29.85	758.1	54.7	12.6	68	NNE			2		5		NE	0	0	Cloudy	Normal School.
Nismes, Normal School	29.66	753.4	29.87	758.6	63.5	17.5	78	N			4		2		N	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.60	751.9	29.98	761.4	56.8	13.8	50	SW			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	29.72	754.8	29.96	760.9	55.0	12.8	56	NW			1		5kn		E	0	0	Cloudy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	29.90	759.4	29.93	760.2	66.2	19.0	45	ENE			2		5		ENE	0	0	½ covered	Lt. Decante, Director.
Rouen, Normal School	29.89	759.1	29.97	761.3	58.8	14.9	68	N			2		5		NE	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	28.85	732.8	29.89	759.2	69.8	21	49	NW			3		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.19	741.4	29.91	759.6	52.5	11.4	95	NNW			1		10		NW	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.4	23.										0	0		L'Abbé Marchésl.
Marseilles, Observatory			29.80	756.8	63.9	17.7	36	W			3		3			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.74	628.4	30.06	763.4	53.4	11.9	47	ESE	9.3	4.17			5		W	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.67	753.6	29.95	760.6	56.7	13.7	62	N			1		7		NNW	0	0		Marié Davy, Director.
Perpignan			29.84	757.8	66.0	18.9	58	SE	11.2	5.00			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.20	538.6			35.6	2.0		N			1		9					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.49	570.1			36.5	2.5		N			2		9			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.79	756.7	29.96	760.9	55.0	12.8	65	NNE			1		7		N;NE	Inap.	Inap.		E. Renou.
Toulouse, Observatory	29.20	741.6	29.92	759.9	63.0	17.2	33	NW			1		1			0	0		The Staff.
Tours	29.66	753.3	29.85	758.3	59.7	15.4	44	ENE			1		5		NNW	0	0		C. Marquet.
Versailles, (near Paris)			29.95	760.8	56.1	13.4	60	NE			1		8			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.07	763.6	30.09	764.3	64.0	17 8	81	E	3.4	1.5			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,536.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.80	756.9	29.97	761.2	53.8	12.1	68	E			1		9			0	0		Prof. Arndt.
Breslau	29.35	745.6	29.88	759.0	49.1	9.5	93	WNW			2		10			0.022	0.56		Royal University Obs'y.
Carlsruhe	29.47	748.4	29.89	759.1	55.2	12.9	76	NE			1		10		S	0	0		Albert Senz.
Cassel	29.39	746.4	29.99	761.8	55.8	13.2	65	NE			3		10	NE		0	0		Dr. H. Möhl.
Crefeld	29.77	756.2	29.93	760.3	57.7	14.3	68	NE			2		5			0	0		Director Lose.
Emden	30.02	762.5	30.06	763.4	54.1	12.3	91	NE			2		2			0	0		Prof. Prestel.
Frankfort on the Main	29.57	751.0	29.93	760.2	57.6	14.2	55	NNE			2		10			0	0		Physical Society.
Friedrichshafen	28.42	721.9	29.84	758.0	56.5	13.6	65	NE			7		10	ENE		0	0		M. Wilhelm.
Hamburg	29.94	760.5	30.01	762.3	54.3	12.4	68	ENE			4		7c;k			0.059	1.5	Fine	Captain F. Hegemann.
Kiel	30.02	762.4	30.03	762.8	52.0	11.1	70	NE			3		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.88	758.9	29.95	760.7	54.5	12.5	74	E										Cloudy	Prof. E. Luther.
Köslin			29.91	759.7	53.6	12.0		ENE			2		4			0	0		H. Müller.
Leipsic, Observatory	29.56	750.9	29.99	761.7	50.5	10.3	81	N			2		10	NE		0	0		Prof. Bruhns.
Memel, Naval School	29.98	761.5	30.03	762.7	52.9	11.6	56	NE			2		9cs;ks					Squally	Reinbrechtvon Skalweit.
Neufahrwasser	29.95	760.6	29.96	761.0	51.8	11.0	77	ENE			2		10			0	0		A. Lothes.
Posen	29.65	753.1	29.94	760.5	49.6	9.8	99	N			2		10					Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.36	745.8	29.91	759.8	54.5	12.5	69	N			3		9	NE		0.026	0.67		Dr. Schur.
Stuttgart	28.94	735.1	29.87	758.8	55.4	13.0	72	NE			1		7	E		0.075	1.9		Prof. Schoder.
Treves, (Trier)	29.29	743.9	29.81	757.1	57.9	14.4	59	N			3		5			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.37	720.5	29.86	758.4	55.9	13.3	56	N			2		3		NNW	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.00	762.0	30.05	763.3	50.9	10.5	66	NE			2		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.48	748.8	29.86	758.4	77.0	25.5		SW										½ Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.78	756.3	29.83	757.6	84.0	28.9	75	SW	20.0?	8.9?			9			0	0	D. clouds	
Deesa	29.44	747.6	29.91	759.7	83.2	28.4	71	SSW					10		S	0	0	Threatening	
Bombay	29.84	758.0	29.88	759.0	82.3	27.9	83	S	22.0	9.8			4	S		0.02	0.5	D. clouds	
Poona	27.84	707.1	29.85	758.2	76.2	24.6	84	SE					10		SE	0.26	6.6	Thunder-storm	
Lahore	29.03	737.4	29.76	755.9	89.6	32.0	41	Calm	0.9	0.4			0			0	0	Blue sky	
Belgaum	27.39	695.7	29.95	760.7	73.9	23.3	86	W	1.0	0.4			2			0	0	D. clouds	
Bangalore																			
Roorkee	28.88	733.4	29.75	755.7	91.8	33.2	35	Calm	3.8	1.7						0	0		
Agra	29.20	741.6	29.74	755.4	99.7	37.6	19	NW								0	0		
Trichinopoly																			
Nagpur	28.79	731.4	29.82	757.4	88.2	31.2	44	SW	3.6	1.6			8			0	0	D. clouds	
Madras																			
Lucknow	29.46	748.3	29.83	757.6	92.2	33.4	50	SSW	2.9	1.3						0	0	Blue sky	
Allahabad	29.47	748.6	29.78	756.4	88.7	31.5	56	Calm	2.6	1.2			0			0	0	Blue sky	
Patna	29.65	753.1	29.83	757.7	87.4	30.8	58	E	1.8	0.8			2	E	E	0	0		
Hazaribagh	27.83	707.0	29.84	757.9	80.0	26.7	75	ESE	4.4	2.0			0			0	0	Blue sky	
Cuttack	29.76	755.9	29.84	758.0	85.5	29.7	59	SSE	2.4	1.1			3			0	0	Lightning	
Calcutta (Alipore)	29.84	758.0	29.86	758.5	79.7	26.5	85	SSE	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.46	748.2	29.85	758.2	79.8	26.6	85	ESE	3.2	1.4			0			0	0	Blue sky	
Chittagong	29.78	756.4	29.87	758.8	80.1	26.7	89	Calm	1.8	0.8			2			0	0	Blue sky	
Sibsagar	29.55	750.4	29.88	759.0	77.7	25.4	83	ENE	2.4	1.1			10	W		0	0	D. clouds	
Rangoon																			
Jubbulpore	28.45	722.7	29.80	757.0	85.5	29.7	67	NE	2.4	1.1			8	N		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.00	558.9	29.87	758.7	35.2	1.8	92	E			2		10			7.086*	180.0*		Ab. Dom. Mongini.
Stelvio	21.98	558.4	29.87	758.7	36.0	2.2		WSW			2		9	NNE		0	0		Signora Ernesta Manfredi.
Udine	29.35	745.5	29.76	755.9	65.7	18.7	35	Calm	0	0			6			0	0		Prof. Giovanni Clodig.
Padua	29.65	753.2	29.76	756.0	65.7	18.7	45	NE	3.1	1.4			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.58	751.2	29.77	756.1	66.9	19.4	44	S	1.8	0.8			1	W		0	0		Conte Alm. Da Schio.
Verona	29.55	750.6	29.77	756.2	72.5	22.5	43	E	8.1	3.6			2	SW		0	0		Dott. B. Bertoncelli.
Bergamo	28.47	723.2	29.74	755.5	64.4	18.0	48	E			1		2			0.138	3.5		Prof. Trionfini Carlo.
Domodossola	28.78	731.0	29.81	757.1	55.6	13.1	89	E			1		10			0	0		Prof. Giuseppe Calza.
Milan	29.27	743.5	29.78	755.5	65.7	18.7	61	E			2		0			0.067	1.7		Ab. Gio. Capelli.
Pavia	29.43	747.6	29.78	756.4	61.3	16.3	63	E			1		7	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.90	734.0	29.81	757.1	58.6	14.8	80	N	3.1	1.4			9	SW		0.709	18.0		Prof. P. F. Denza.
Mondovi	27.88	708.2	29.80	756.9	59.7	15.4	57	NW			2		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.57	751.1	29.79	756.6	68.0	20.0	57	ESE			2		8	SW		0	0		Prof. L. Vassallo.
Genoa	29.60	751.9	29.77	756.2	68.4	20.2	56	SW	4.9	2.2			8	W		0	0		Prof. G. M. Garibaldi
Piacenza	29.51	749.5	29.76	756.0	66.9	19.4	39	NE	11.9	5.3			3	SW		0	0		Dott. G Manzi.
Parma	29.51	749.6	29.83	757.6	66.7	19.3	47	ESE			2		1			0	0		Prof. P. Pigorini.
Florence	29.52	749.8	29.78	756.3	68.7	20.4	38	W			2		0			0	0		Cav. F Meucci.
Leghorn	29.70	754.3	29.78	756.4	67.3	19.6	59	W	2.5	1.1			3			0	0		Prof. P. Monte.
Siena	28.59	726.1	29.79	756.7	65.8	18.8	39	NNW	0	0			2	NNW		0	0		Prof. L. Toscani.
Urbino	28.25	717.6	29.82	757.3	60.3	15.7	59	NE			1		10			0	0		Prof. P. Serpieri.
Pesaro	29.73	755.1	29.78	756.3	63.1	17.3	76	NW	13.0	5.8			2	NW		0	0		Prof. Luigi Guidi.
Ancona	29.66	753.3	29.76	756.0	65.5	18.6	67	NW			4		1			0	0		Prof. F. DeBosis.
Grosseto	29.68	753.9	29.79	756.7	71.2	21.8	41	SSE			4		4	S		0	0		Avv. P. Ponticelli.
Rome	29.58	751.2	29.75	755.6	72.7	22.6	51	W	4.3	1.9			2			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.57	751.0	29.76	756.0	69.1	20.6	71	WNW			4		10	SW		0.606	15.4		Prof. L. Palmieri.
Lecce	29.37	746 1	29.62	752.4	68.0	20.0	79	NW	8.7	3.9			10	W		0.854	21.7		Prof. C. De Giorgi.
Cosenza	28.93	734.7	29.80	756.9	69.3	20.7	74	SE	0	0			10			0.409	10.4		Prof. F. D. Conti.
Cagliari	29.58	751.2	29.76	756.0	72.5	22.5	39	NW			4		5	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.66	753.3	29.71	754.5	72.7	22.6	61	S			2		8	N		0	0		Prof. F. Cafiero.
Palermo	29.52	749.7	29.76	756.0	72.7	22.6	45	W	1.8	0.8			6			0.224	5.7		Prof. G. Cacciatore.
Caltanissetta	27.87	707.8	29.78	756.4	66.2	19.0	62	WNW			4		5			0.016	0.4		Prof. A. Pagani.
Syracuse	29.67	753.6	29.74	755.5	72.5	22.5	78	SW			4		7			0.209	5.3		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.24	742.6	29.79	756.7	69.8	21.0	65	NE	1.3	0.6			9			0.594	15.1		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.0 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.64	752.8	29.74	755.4	62	16.7	96	SE	2.4	1.1						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.2	30.17	766.2	55.4	13.0	62	W	0.1	0.05		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.00	761.9	30.00	761.9	54.7	12.6		ENE			3					0.118	3.0		
Groningen	29.95	760.8	30.01	762.2				NE			2					0	0		
Helder	30.01	762.2	30.01	762.2	52.7	11.5		NE			1					0	0		
Hellevoetsluis			29.97	761.3	56.8	13.8	62	ENE			4								
Utrecht	29.94	760.5	29.99	761.7	57.2	14.0	57	NNE			2		5			0	0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter; except Hellevoetsluis by force scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.02	762.4	30.07	763.8	52.9	11.6	76	SSW	13.4	6.0			4			0	0		
Brönö	30.01	762.2	30.05	763.2	44.1	6.7	72	Calm	0	0			5			0	0		
Christiania	30.01	762.2	30.16	766.0	50.4	10.2	61	W	0	0			1			0	0		
Tromsö	29.91	759.7	29.95	760.8	37.8	3.2	66	SW	4	2			10			0.165	4.2		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.71	754.7	29.90	759.5	66.9	19.4	90	ESE	16.1	7.2			10			1.299	33.0		
Campo Major	28.96	735.6	29.98	761.4	66.7	19.3	61	W	6.9	3.1			7	W		0	0		Dr. J. A. Sampaio
Funchal, (Madeira)	29.96	761.0	30.03	762.8	75.0	23.9	59	SW	8.1	3.6			2			0	0		Dr. A. M. R. dos Santos.
Lisbon, Observatory	29.60	751.8	29.95	760.8	64.8	18.2	97	S	8.7	3.9			10			0.106	2.7	Light rain	Capt. D. A. de Cunha.
Ponta Delgada, (Azores)	29.75	755.7	29.82	757.5	70.2	21.2	96	S	14.3	6.4			10			1.346	34.2	Light rain	The Staff.

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.45	747.9	29.87	758.6	54.9	12.7	78	ENE	7	3			10						Astronomical Obs.
Wilna	29.57	751.0	29.98	761.6	54.1	12.3	65	E	2	1			10						Astronomical Obs.
Dorpat	29.95	760.7	30.20	767.1	41.7	5.4	50	ENE	7	3			1						Physical Cabinet.
St. Petersburg	30.13	765.2	30.14	765.6	40.6	4.8	47	WNW	11	5			1						Central Physical Obs.
Kuopio	29.80	756.8	30.13	765.3	36.3	2.4	94	N	7	3			0?					Raining?	Ch. Forsten.
Kieff	29.22	742.1	29.86	758.5	44.1	6.7	98	SE	9	4			10					Light rain	Physical Cabinet.
Nikolaiev	29.84	757.8	29.91	759.6	65.1	18.4	63	S	4	2			10						Kurdakof.
Kertch	29.96	760.9	29.98	761.4	73.4	23.0	70	SSE	4	2			8						Lagorio.
Moscow	29.57	751.0	30.13	765.3	39.9	4.4	45	NW	9	4			0						Meteorological Obs.
Lugan	29.78	756.5	29.99	761.7	51.3	10.7	63	ESE	4	2			9						Meteorological Obs.
Archangel	29.77	756.1	29.79	756.6	35.2	1.8	82	WNW	22	10			10						Ogorodnikof.
Tiflis	28.87	733.2	30.27	768.9	65.8	18.8	52	SE	9	4			2						Physical Observatory.
Astrakhan	30.26	768.5	30.17	766.4	56.5	13.6	61	ESE	13	6			10						Sebastianof.
Kasan	29.64	752.9	29.92	759.9	39.0	3.9	61	NW	7	3			4						Physical Cabinet.
Orenburg	29.93	760.3	30.31	769.9	48.2	9.0		E	11	5			0						Tschernischef.
Ekaterinburg	28.57	725.6	29.54	750.2	31.5	— 0.3	96	S	18	8			10					Snowing	Meteorological Obs.
Nukuss	30.23	767.9	30.47	774.0	49.6	9.8	46	ENE	7	3			0						
Kasaly																			Bobrof.
Tashkend	29.57	733.3	30.63	778.0	48.7	9.3	80	N	7	3			10						Michelson.
Barnaul	29.67	753.7	30.21	767.4	35.6	2.0	91	W	4	2			8						Meteorological Obs.
Yeniseisk	29.79	756.6	29.93	760.3	44.6	7.0	77	SE	2	1			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.99	761.7	30.13	765.3	63.0	17.2	72	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					45.5	7.5	89	N	20	9			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.69	703.4	29.86	758.4	67.8	19.9	61	SW	13.4	6.00		0	2			0	0	Partly cl'dy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.79	756.7	29.88	758.8	78.4	25.8	86	SSW	6.7	3.0		6c	0	NNE		0	0	Solar halo	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.90	759.4	30.00	761.9	70.0	21.1	76	W	10.8	4.80		0	3		W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.86	758.5	83.5	28.6	79	SE	0	0		7s	1k			0.118	3.00	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.14	765.5	30.18	766.5	35.2	1.8		Calm			0		7			0	0		
Umea	30.12	765.1	30.17	766.4	43.5	6.4	83	Calm			0		8			0	0		
Hernosand	30.09	764.3	30.14	765.6	45.7	7.6	89	S			2		10			0	0		
Stockholm	30.00	762.0	30.10	764.5	45.7	7.6	80	ENE			4		8			0	0		
Wisby	30.04	763.0	30.10	764.5	49.6	9.8	71	E			6		10			0	0		
Sub-Series.																			
Upsala	30.11	764.7	30.18	766.6	48.2	9.0	45	ENE	5.4	2.4			8		NNE	0	0		Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.45	722.6	29.88	758.9	53.1	11.7	76	NE			1		10			0	0	Covered	The Observatory.
Zurich	28.23	717.0	29.87	758.7	52.3	11.3	85	NW			1		8			0	0	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —3.8 mm; Thermometer, —3.5 cent.; Relative Humidity, +7 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.89	759.1	75.4	24.1	65	WSW	0	0			8		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.98	761.6	75.2	24		SW			1		10			Blank	Blank		B. Stefanidès.
Valona			29.83	757.6	77.4	25.2		S			2		10			1.86	47.	Covered	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.95	760.6	83.8	28.8	58	NNE			3		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.17	766.3	30.24	768.1	44.3	6.8	96	N	2	0.9			10						Hon. J. Ferguson.
Brockville, Ontario			30.05	763.3	48	8.9		NE	8	3.6			10s		NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B			30.26	768.6	43	6.1	95	N	1	0.4			10s		NW	0.27	6.9	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			30.22	767.6	47	8.3	92	N	8	3.6			10n		Calm			Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.82	757.4	30.01	762.2	46.1	7.8	94	E			3		10s			0	0	Dull	James Smith, M. A.
Dalhousie, N. B	30.23	767.8	30.27	768.8	43.8	6.6	86	W			1					0.26	6.6	Bright	H. A. Johnson.
Esquimault, B. C	30.18	766.6	30.23	767.8	42.3	5.7	100	N				4ck	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.27	768.8	41	5.0	96	SW	5	2.2		2k	0	SW		0.03	0.8	Clear	J. McWilliams.
Fredericton, N. B	30.18	766.6	30.24	768.1	44.4	6.9	86	NE	8	3.6			10s		NE	0.07	1.8	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.85	758.2	36	2.2	100	N	12	5.4			10n		Calm	0.384	9.75	Light rain	James Stewart.
Goderich, Ontario	29.17	740.9	29.94	760.5	59.5	15.3	92	S			1		10n			0	0	Threatening	H. J. Strang, M. A
Granton, Ontario	28.87	733.3	29.96	761.0	56	13.3	100	SE			1		Fog			0	0	Foggy	James Grant.
*Halifax, N. S	30.00	762.0	30.13	765.3	52	11.1	93	NE	6	2.7			10n			Inap.	Inap.	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.64	752.8	30.00	762.0	61.7	16.5	88	E			2	10cs	0	E		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.07	763.8	30.10	764.5	45	7.2	61	SW			3		10n			Inap.	Inap.	Overcast	E. Weedon.
*Kingston, Ontario	29.72	754.9	30.09	764.3	48	8.9	87	NE	12	5.4		8ck	Sm'e	NE	NE	0	0	Fair	S. Woods, M. A.
*Montreal, Quebec	29.91	759.7	30.11	764.8	45	7.2	92	NE	12	5.4			10n			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.31	744.5	30.00	762.0	52	11.1	89	E	8	3.6		5k	5ks	E	E	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.30	744.2	30.05	763.3	49.7	9.8	78	Calm			0	0	0			0	0	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.30	744.2	29.98	761.5	57	13.9	100	NE	3	1.3			Fog		NE	0	0	Foggy	H. Morgan.
Port Hastings, N. S	30.14	765.5	30.19	766.8	50	10.0		Calm	0	0						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.34	745.2	29.98	761.5	55	12.8	96	E	4	1.8			Fog			0	0	Foggy	M. Payne.
*Quebec, Quebec	29.86	758.4	30.18	766.6	43	6.1	92	NE	20	8.9			10n		NE	0.37	9.4	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.64	752.8	30.10	764.5	45	7.2	84	E	8	3.6			10s		E	0.57	14.5	Cloudy	W. H. McIntyre.
St. John, N. B	30.01	762.2	30.18	766.6	47	8.3	92	N	9	4.0			10n			0.07	1.8		G. Murdock, C. E.
*Saugeen, Ontario	29.24	742.7	29.92	760.0	57	13.9	98	SE	8	3.6			Fog			0	0	Foggy	K. Stewart.
Stayner, Ontario			29.98	761.5	54	12.2	87	SE	8	3.6			Haze			0	0	Smoky	R. J. Cole.
Stratford, Ontario	28.69	728.7	29.95	760.7	55.9	13.3	99	SE	9	4.0			Fog			0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.19	766.8	30.22	767.6	49	9.4	89	Calm	0	0			10s			0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.02	762.5	54	12.2	87	NE	5	2.2			Sm'e			0	0	Smoky	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					45.0	7.2	76	W				10k	10s			Inap	Inap.	Cloudy	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.82	757.4	30.05	763.3	54	12.2	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Alpena, Michigan	29.24	742.7	29.88	758.9	55	12.8	93	NE	8	3.6			Fog		Calm	0.17	4.3	Foggy	
Atlantic City, New Jersey	30.03	762.7	30.05	763.3	69	20.6	90	SE	8	3.6		2k	0	W		0	0	Fair	
Augusta, Georgia	29.59	751.6	29.76	755.9	72	22.2	90	SE	8	3.6			10n		SE	0.22	5.6	Light rain	
Baltimore, Maryland	30.01	762.2	30.06	763.5	65	18.3	100	NE	5	2.2			Fog		Calm	0	0	Foggy	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	70	21.1	84	E	9	4.0		0	0			0	0	Clear	
Bismarck, Dakota	28.24	717.3	29.95	760.7	35	1.7	79	N	28	12.5			10n		Calm	0.63	16.0	Light rain	
Boise City, Idaho	27.44	697.0	30.21	767.3	29	— 1.7	78	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.96	761.0	30.12	765.0	56	13.3	93	NE	4	1.8			10s		N	0.01	0.3	Cloudy	
Brackettville, Texas	28.62	726.9	29.59	751.6	76	24.4	72	Calm	0	0		0	2s		Calm	Inap.	Inap.	Fair	
Breckenridge, Minnesota	28.84	732.5	29.84	757.9	42	5.6	83	W	9	4.0			10ks		SW	0.16	4.1	Cloudy	
Brownsville, Texas	29.72	754.9	29.78	756.4	72	22.2	90	SE	5	2.2		0	0			0	0	Clear	
Buffalo, New York	29.26	743.2	29.96	761.0	54	12.2	100	NE	6	2.7			Fog		NE	0	0	Foggy	
Burlington, Vermont	29.82	757.4	30.08	764.0	53	11.7	86	N	2	0.9			Fog			0	0	Foggy	
Cairo, Illinois	29.45	748.0	29.82	757.4	67	19.4	90	NE	3	1.3		5ck	0	Calm		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.78	680.2	30.27	768.8	54	12.2	43	Calm				0	0			0	0	Clear	
Campo, California	27.34	694.4	29.91	759.7	34	1.1	90	E	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.87	758.7	29.88	758.9	74	23.3	85	E	11	4.9			10n		E	0.01	0.3	Light rain	
Cape Henry, Virginia	29.96	761.0	29.98	761.5	72	22.2	90	E	16	7.2		8c;cs	0	W		0	0	Fair	
Cape Lookout, N. Carolina	29.90	759.4	29.91	759.7	77	25.0	86	E	19	8.5		8c; cs; k	0	W; E		0	0	Cloudy	
Cape May, New Jersey	30.02	762.5	30.05	763.3	69	20.6	90	NE	8	3.6		5k	0	SW		0	0	Fair	
Charleston, South Carolina	29.74	755.4	29.80	756.9	76	24.4	90	NE	16	7.2			10n		E	0.05	1.3	Light rain	
Cheyenne, Wyoming	24.15	613.4	30.09	764.3	28	— 2.2	67	N	24	10.7		2ck	2s	W	W	0	0	Fair	
Chicago, Illinois	29.12	739.6	29.78	756.4	64	17.8	94	Calm	0	0			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.16	740.7	29.78	756.4	62	16.7	77	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Cleveland, Ohio	29.28	742.2	29.93	760.2	58	14.4	76	SE	12	5.4		0	0			0	0	Clear	
Concho, Texas	27.83	706.9	29.43	747.5	72	22.2	54	SW	18	8.0		0	0			0	0	Clear	
Corsicana, Texas	29.30	744.2	29.75	755.6	71	21.7	80	E	8	3.6		Haze	5s	Calm	E	0	0	Fair	
Davenport, Iowa	29.16	740.7	29.77	756.1	66	18.9	59	S	1	0.4		4c	0	SW		0.01	0.3	Clear	
Denison, Texas	28.93	734.8	29.69	754.1	68	20.0	84	E	7	3.1		0	0			0	0	Clear	
Denver, Colorado	24.91	632.7	30.13	765.3	41	5.0	28	N	8	3.6			10s		Calm	0	0	Cloudy	
Detroit, Michigan	29.22	742.2	29.87	758.7	61	16.1	84	E	4	1.8			Fog		Calm	0	0	Foggy	
Dodge City, Kansas	27.21	691.1	29.47	748.5	48	8.9	92	NE	40	17.9			10n		NE	Inap.	Inap.	Light rain	
Dubuque, Iowa	29.05	737.9	29.72	754.9	66	18.9	90	S	4	1.8			10s		Calm	0.02	0.5	Cloudy	
Duluth, Minnesota	29.01	736.8	29.77	756.1	48	8.9	92	Calm	0	0			10n		Calm	1.33	33.8	Heavy rain	
Eagle Pass, Texas	28.94	735.1	29.64	752.8	77	25.0	49	NE	6	2.7		2ck	5s	NW	Calm	0	0	Cloudy	
Eastport, Maine	30.06	763.5	30.12	765.0	48	8.9	92	NE	20	8.9			10s		NE	0.02	0.5	Cloudy	
Erie, Pennsylvania	29.22	742.2	29.92	760.0	61	16.1	82	Calm	0	0		0	Sm'e			0	0	Clear	
Escanaba, Michigan	29.17	740.9	29.80	756.9	57	13.9	97	SE	14	6.3			10n		SE	0.30	7.6	Light rain	
Florence, Arizona	28.32	719.3	29.92	760.0	74	23.3	55	S				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.05	610.9	30.05	763.3	56	13.3	39	NW	6	2.7		0	0			0	0	Clear	
Fort Craig, New Mexico	25.46	646.7			61	16.1	40	W	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.17	740.9	29.68	753.9	70	21.1	79	SE	5	2.2		0	8s		W	Inap.	Inap.	Fair	
Fort Griffin, Texas	28.41	721.6	29.60	751.8	73	22.8	58	Calm	0	0		0	2s		Calm	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.42	721.9	29.46	748.3	72	22.2	67	SE	8	3.6		2k	0	SW		0	0	Fair	
Fort Sully, Dakota	28.41	721.6	30.11	764.8	38	3.3	81	NW	16	7.2			10s		Calm	0.02	0.5	Cloudy	
Galveston, Texas	29.72	754.9	29.76	755.9	76	24.4	95	W	3	1.3		0	Haze		Calm	0	0	Clear	
Grand Haven, Michigan	29.20	741.7	29.82	757.4	61	16.1	94	E	9	4.0			10s		SE	0	0	Cloudy	
Indianapolis, Indiana	29.06	738.1	29.81	757.2	63	17.2	78	SE	1	0.4		8ck	0	SW		0	0	Fair	
Indianola, Texas	29.74	755.4	29.77	756.1	79	26.1	86	S	8	3.6		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.62	752.3	29.64	752.8	76	24.4	90	SE	14	6.3			10n		SE	0.28	7.1	Heavy rain	
Keokuk, Iowa	29.14	740.1	29.72	754.9	69	20.6	79	S	2	0.9		1ck	4s	S	Calm	0.09	2.3	Fair	
Key West, Florida	29.79	756.7	29.82	757.4	82.0	27.8	78	SW	11	4.9		5cs	1ks	SW	Calm	1.45	36.8	Cloudy	
Kittyhawk, North Carolina	29.95	760.7	29.97	761.2	71	21.7	100	NE	12	5.4		5c	2s	W	W	0.03	0.8	Fair	
Knoxville, Tennessee	28.84	732.5	29.80	756.9	66	18.9	68	NE	10	4.5			10s		NE	0	0	Cloudy	
La Crosse, Wisconsin	29.01	736.8	29.72	754.9	59	15.0	87	S	6	2.7			10s		S	0	0	Cloudy	
La Mesilla, New Mexico	25.92	658.4	30.07	763.8	54	12.2	67	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					80	26.7	62	SE	4	1.8		10cs	0	Calm		0	0	Cloudy	
Leavenworth, Kansas	28.85	732.8	29.65	753.1	65	18.3	89	Calm	0	0		10k	0	Calm		0	0	Cloudy	
Los Angeles, California	29.55	750.6	29.88	758.9	64	17.8	83	N	3	1.3			10s		N	0	0	Cloudy	
Louisville, Kentucky	29.27	743.4	29.80	756.9	67	19.4	78	N	2	0.9		0	Fog		N	0	0	Foggy	
Lynchburg, Virginia	29.30	744.2	29.95	761.0	68	20.0	79	E	4	1.8			10n		Calm	0.04	1.0	Light rain	
Maricopa Wells, Arizona					63	17.2	61	S				0	0			0	0	Clear	
Marquette, Michigan	29.05	737.9	29.73	755.1	53	11.7	79	E	4	1.8			10n		Calm	0.55	14.0	Light rain	
Mason, Texas	28.14	714.7	29.82	757.4	70	21.1	70	Calm	0	0		2ck	2s	Calm		0.09	2.3	Fair	
Memphis, Tennessee	29.50	749.3	29.81	757.2	70	21.1	71	NE	4	1.8			10s		NE	0	0	Cloudy	
Milwaukee, Wisconsin	29.16	740.7	29.82	757.4	61	16.1	100	SE	3	1.3			Fog		Calm	0.13	3.3	Dense fog	
Mobile, Alabama	29.50	750.8	29.60	751.8	72.5	22.5	83	N	15	6.7		5k	5s	N	N	0.67	17.0	Cloudy	
Montgomery, Alabama	29.35	745.5	29.57	751.1	71.5	21.9	82	NE	14	6.3			10n		NE	0.57	14.5	Light rain	
Morgantown, West Virginia	28.92	734.6	29.96	761.0	55	12.8	87	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.93	607.8	30.29	769.4	45	7.2	92	NW	18	8.0			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.29	744.0	29.81	757.2	67	19.4	90	Calm	0	0		10k	0	S		Inap.	Inap.	Cloudy	
New Haven, Connecticut	29.97	761.2	30.09	764.3	62	16.7	94	Calm	0	0			Fog		Calm	0	0	Foggy	
New London, Connecticut	30.07	763.8	30.12	765.0	61	16.1	100	Calm	0	0			Fog		Calm	0	0	Dense fog	
New Orleans, Louisiana	29.63	752.6	29.69	754.1	72.5	22.5	83	NW	12	5.4		4k	5ks	N	N	0.05	1.3	Cloudy	
Newport, Rhode Island	30.06	763.5	30.11	764.8	59	15.0	94	NE	4	1.8			Fog			0	0	Foggy	
New York, New York	29.92	760.0	30.10	764.5	63	17.2	94	NE	3	1.3			Fog			0	0	Foggy	
Norfolk, Virginia	29.93	760.2	29.99	761.7	70	21.1	95	E	7	3.1			10s		E	0	0	Cloudy	
North Platte, Nebraska	27.14	689.3	29.75	755.6	42	5.6	42	N	36	16.1			10s		N	Inap.	Inap.	Cloudy	
Olympia, Washington Ter.	30.16	766.1	30.20	767.1	40	4.4	91	SE	4	1.8			10n		Calm	0.10	2.5	Light rain	
Omaha, Nebraska	28.73	729.7	29.79	756.7	53	11.7	86	N	23	10.3			10s		N	0.01	0.3	Cloudy	
Oswego, New York	29.70	754.4	30.01	762.2	58	14.4	94	Calm	0	0			Fog		Calm	0	0	Foggy	
Pembina, Dakota	28.97	735.8	29.81	757.2	38	3.3	95	NW	22	9.8			10s		NW	0.18	4.6	Cloudy	
Philadelphia, Pennsylvania	30.02	762.5	30.08	764.0	61	16.1	100	NE	6	2.7			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					65	18.3	44	E				0	0			0	0	Clear	
Pike's Peak, Colorado	17.76	451.1	29.96	761.0	22	— 5.6	48	SW	36	16.1		0	0			0	0	Clear	
Pioche, Nevada	24.13	612.9	29.90	759.4	35	1.7	35	N	7	3.1		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.15	740.4	29.95	760.7	55	12.8	93	NE	2	0.9			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.25	742.9	29.89	759.2	59	15.0	88	SE	3	1.3			Fog		Calm	0	0	Foggy	
Portland, Maine	30.07	763.8	30.12	765.0	58	14.4	75	NE	2	0.9		10k	Haze	N		0	0	Cloudy	
Portland, Oregon	30.18	766.6	30.28	769.1	44	6.7	92	Calm	0	0			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.68	626.9	30.04	763.0	46	7.8	43	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.74	755.4	29.75	755.6	81	27.2	70	SW	32	14.3		0	8ks		SW	0	0	Cloudy	
Red Bluff, California	29.67	753.6	30.03	762.7	57	13.9	25	N	9	4.0		2c	0	Calm		0	0	Clear	
Rochester, New York	29.38	746.2	29.98	761.5	58	14.4	93	E	5	2.2			Fog		E	0	0	Foggy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.66	753.4	30.25	768.3	37.5	3.1	95	Calm	0	0	.....	.....	Fog	.....	Calm	0.03	0.8	Foggy	
Sacramento, California	29.90	759.4	29.99	761.7	50	10.0	44	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.25	742.9	29.80	756.9	68	20.0	84	SE	3	1.3	.....	5k	Fog	SE	.....	0	0	Fair	
St. Marks, Florida	29.18	741.2	29.19	744.4	75	23.9	97	S	62	27.7	.....	.....	10n	.....	.....	5.59†	142.0†	Heavy rain	
St. Paul, Minnesota	28.98	736.1	29.80	756.9	50	10.0	93	NW	8	3.6	.....	.....	10n	.....	NW	1.53	38.9	Light rain	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.88	657.3	30.15	765.8	40	4.4	18	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.07	738.4	29.63	752.6	70	21.1	75	Calm	0	0	.....	2c	0	Calm	.....	0	0	Clear	
San Diego, California	29.84	757.9	29.91	759.7	63	17.2	83	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.24	742.7	29.89	759.2	68	20.0	60	S	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.06	763.5	30.08	764.0	64	17.8	94	NE	3	1.3	.....	.....	10ks	.....	E	Inap.	Inap.	Cloudy	
San Francisco, California	29.94	760.5	30.01	762.2	53	11.7	86	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	47	8.3	42	N	2	0.9	.....	0	Haze	.....	.....	0	0	Hazy	
Savannah, Georgia	29.63	752.6	29.72	754.9	76	24.4	95	SE	18	8.0	.....	.....	10n	.....	SE	0.71	18.0	Light rain	
Shreveport, Louisiana	29.57	751.1	29.78	756.4	70	21.1	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.84	757.9	29.88	758.9	74	23.3	90	E	8	3.6	.....	8cs	2s	E	W	0.09	2.3	Cloudy	
Springfield, Massachusetts	29.91	759.7	30.04	763.0	62	16.7	83	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	65	18.3	41	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	.....	.....	.....	.....	67	19.4	49	SW	12	5.4	.....	0	1s	.....	Calm	Inap.	Inap.	Clear	
Thatcher's Island, Mass	30.06	763.5	30.12	765.0	56	13.3	93	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Foggy	
Toledo, Ohio	29.22	742.2	29.87	758.7	66	18.9	90	NE	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Tucson, Arizona	27.47	697.7	30.02	762.5	67	19.4	73	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.69	754.1	29.72	754.9	77	25.0	90	E	20	8.9	.....	.....	10ks	.....	E	1.01	25.7	Threatening	
Umatilla, Oregon	29.97	761.2	30.50	774.7	36	2.2	90	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.52	749.8	29.77	756.1	68	20.0	90	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Virginia City, Montana	24.47	621.5	29.95	760.7	26	— 3.3	88	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.64	752.8	30.02	762.5	43	6.1	66	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.93	760.2	30.04	763.0	64.5	18.1	100	E	4	1.8	.....	.....	Fog	.....	E	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	53	11.7	23	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.80	756.9	29.88	758.9	73	22.8	90	NE	10	4.5	.....	.....	10s	.....	NE	0.01	0.3	Cloudy	
Winnemucca, Nevada	25.83	656.1	30.19	766.8	27	— 2.8	42	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.08	764.0	30.14	765.5	62	16.7	88	NE	2	0.9	.....	.....	10s	.....	NE	0	0	Cloudy	
Yankton, Dakota	28.70	729.0	29.99	761.7	45	7.2	92	NW	5	2.2	.....	.....	10n	.....	Calm	0.48	12.2	Light rain	
Yuma, Arizona	29.68	753.9	29.84	757.9	60	15.6	33	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.97	761.2	30.02	762.5	30.5	— 0.8	95	SW	6	2.7	.....	0	6s	.....	NW	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.81	757.2	29.83	757.7	80	26.7	86	S	2.4	1.1	.....	8c	0	Calm	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.08	764 0	30.09	764.3	80	26.7	82	Calm	0	0	.....	8c	2s	Calm	.....	0	0	.....	James Gall.
San'iago de Cuba, W. I.	29.93	760.2	29.94	760.5	79	26.1	86	Calm	0	0	.....	4c	1ks	SW	S	0	0	.....	T. W. Beattie.
Navassa, W. I.	29.84	757.9	29.92	760.0	83.5	28.6	.....	SE	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	83	28.3	91	S	.....	.....	.....	4c	4ks	E	.....	0	0	Clearing	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.82	757.4	29.84	757.9	82	27.8	87	E	.....	.....	.....	0	8ks	.....	E	.....	.....	.....	L. V. Bigard.
Paramaribo, D. Guiana, S. A.	.....	.....	30.00	762.0	81	27.2	78	E	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.26	641.6	.....	.....	65.2	18.4	84	Calm	.....	.....	0	.....	10s;n	.....	.....	0.43	10.9	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.51 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

*Rain-gauge overflowed.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.01	762.2	52	11.1	47	8.3	77	WSW	2	0.9			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	29.65	753.1			73	22.8	85	NNW	16	7.2			10		NNW	0.10	2.5			Rain & fog	
Navy Yard, Portsmouth, N.H	30.15	765.8	68	20.0	57	13.9	87	Calm	0	0.0			10			0	0			Threatening	
Naval Hospital, Yokohama, Japan	29.68	753.9	69	20.6	67	19.4	88	SE			1		0			0	0			Clear	
Adams, Montevideo, Uruguay	29.99	761.7	73	22.8	57	13.9	75	NNE			4		5		NE	Light	Light	None		D clouds	
Alert, Niigata, Japan	29 81†	757.2†	65	18.3	65	18.3	84	SW			3–4		10		WNW			Moderate.	W	Raining	
Alliance, Constantinople, Turkey.	30.03	762.7	72	22.2	72	22.2	76	SSW			1		6		Calm					Pleasant	
Ashuelot, Che-foo, China	30.19	766.8	78	25.6	65	18.3	68	N			2–3		1					Smooth		D. clouds	
Canonicus, New Orleans, La	29.73	755.1	53	11.7	73	22.8	85	NNW			3		5		NE					Partly cl'dy	
Colorado, New York, N. Y	30.18	766.6	69	20.6	65	18.3	89	ESE	1.5	0.7			8		SE	0	0			Cloudy	
Despatch, Beikos Bay, Bosphorus	30.00	762.0	76	24 4	74	23.3	72	SSE			2		8		S&W			Smooth		Cloudy	
Franklin, Norfolk, Va	30.16	766.1	70	21.1	72	22.2	95	E	2	0.9			8		E	0	0			Cloudy	
Frolic, Barbados, W. I	30.11	764.8	84	28.9	86	30.0	88	ENE			1		3k		S	Light	Light	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.96‡	761.0‡			72	22.2	95	Calm			0		9		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 5° 20′, E. 97° 08′	29.95	760.7			82	27.8	96	WNW			2		7		E	0.5	13.	Smooth	N	Misty	
Lackawana, Esquimault, B. C	30.27	768.8			45	7.2	84	Calm			0		8		N			Smooth		Misty	
Marion, Smyrna, Turkey	29.94	760.5	79	26.1	79	26.1	62	SE			1		9		Calm	0	0	Smooth		D. clouds	
Michigan, Lake Erie	29.42	747 3	73	22.8	68	20.0	84	SSE			1		0							Clear	
Monocacy, Hakodadi, Japan	29.63	752.6	65	18.3	60	15.6	94	N			3		10		N			Smooth		Drizzling	
Monongahela, N. 34° 29′, W. 64° 05′	29.90	759.4	75	23.9	75	23.9	90	E			6–7		kn			Light	Light	Heavy	S&E	Squally	
New Hampshire, Port Royal, S. C	29.93	760.2			75	23.9	95	E	25	11.2			10		NE	0.10	2.5			Squally	
Omaha, Valparaiso, Chili	30.23	767.8	63	17.2	60	15.6	80	Calm	0	0			2		S	0.07	1.8	Slight	N	Pleasant	
Onward, Callao, Peru	30.08	764.0	68	20.0	66.5	19.2	92	SE			1		10					Long	W	Misty	
Ossinee, New York, N. Y	30.24	768.1	70	21.1	66	18.9	89	Calm			0		10		Calm					Foggy	
Palos, Tinghae, China	30.17	766.3	70	21.1	69	20.6	75	ENE			1		3		Calm	0	0	Light	S&E	Clear	
Pensacola, Mare Island, Cal.	30.13	765.3			54	12.2	87	SW			0–1		3			0	0			Clear	
Plymouth, Old Point Comfort	30.29	769.4	76	24.4	72	22.2	95	E			3		10		E			Light	W	Cloudy	
Ranger, Nagasaki, Japan	29.98	761.5			67	19.4	69	Calm			0		0			0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.81	757.2			75	23.9	95	SE			1		0							Blue sky	
Santee, Annapolis, Md	30.13	765.3	70	21.1	67	19.4	95	E			2		10			0	0			Foggy	
St. Louis, League Island, Pa	29.98	761.5	64	17.8	65	18.3	94	SE			4		10			0	0			Dense fog	
Tennessee, Yokohama, Japan	29.95	760.7	75	23.9	70	21.1	61	SSW	6	2.7			1			0	0	Light	S&E	Lightning	
Trenton, Marseilles, France	29.92	760.0	67	19.4	64	17.8	58	NNW	15	6.7			2		N	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.98	761.5	77	25.0	78	25.6	69	Calm			0		8		SW					D. clouds	
Wabash, Boston, Mass	30.14	765.5	58	14.4	58	14.4	88	SE	5	2.2			10		Calm	0	0			D. clouds	
Wyoming, Washington, D. C	30.28†	769.1†	67	19.4	66	18.9		E			1									Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Yokohamo, Japan.			29 91*	759.7*	70	21.1	100	SE			2		0			Smooth		Blue sky	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 02′, W. 157° 37′			30.29†	769.4†	67	19.4		NE			7		10		E	Chop.	E	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 24° 05′, E. 121° 29′			30.17*	766.8*	79	26.1	??	NE			3		c		NE	Smooth		D clouds	Capt. W. H. Kidley.
S. S. Oceanic N. 30°, 39′ W. 140° 40′			30.09	764.3	74	23.3	68	S			2		4		W&S	Smooth		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 50° 12′, E. 2° 52′			30.02	762.5	65.0	18.3	63	SE			4		10		S	Smooth		Blue sky	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 47° 06′, W. 50° 23′			*29.96	*761.0	54	12.2	80	N			2		7		WNW	Moderate	NW	D. clouds	Captain Shackelford.
S. S. Indiana, N. 48° 38′, W. 38° 21′			29.84†	757.9†	52	11.1		WNW			7		6		NE	Heavy	W	Clear	Captain Sargent.
S. S. Ohio, Liverpool.			30.05	763.3	57	13.9	81	SSW			2								Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			?9.79	756.7	74	23.3	??	E	18	8.0			10ks		E			Stormy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 4, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.99	761.8	75.7	24.3	70	Calm			0		2			0	0	Fair	Michel.
Algiers			29.93	760.1	74.8	23.8	54	N			1		0			0	0	Clear	Peter.
La Calle			29.91	759.7	77.4	25.2	73	N			2		3			0.118	3.0	Fair	Fleury.
Tunis			29.95	760.6	78.4	25.8	49	W			3		3			0.039	1.0	Fair	Jacques.
Sfax			29.98	761.4	77.0	25.0		SE			2		6			0.669	17.0	Cloudy	Husson.
Saida			29.98	761.5	70.9	21.6		W			4		2			0	0	Fair	Millot.
Tebessa			29.92	759.9	75.2	24.0		SSW			2		2			0	0	Fair	Bourgeois.
Geriville			29.96	761.0	69.8	21.0	40	W			3		4			0.079	2.0	Cloudy	Lemaillot.
Laghouat			30.01	762.2	77.0	25.0	34	W			4		2			0.276	7.0	Fair	François.
Biskra			29.94	760.5	82 0	27.8	36	NW			2		3			0	0	Fair	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.42	747.3	29.97	761.1	59.2	15.1	65	NE			1		3			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.33	744.9	30.11	764.7	47.8	8.8	84	ENE			2		10			0.055	1.4		Dr. Wierzbiski.
Eperies	29.10	739.0	29.98	761.5	50.2	10.1	83	N			1		10ns		S	0	0		Julius Mikolik.
Gratz	28.74	730.0	29.98	761.4	58.8	14.9	76	WSW			2		8			0.394	10.0		Andreas Rosplini.
Hermannstadt	28.48	723.5	29.88	759.0	60.3	15.7	74	WNW			1		8			0	0		Prof. Reissenberger.
Kremsmünster	28.65	727.8	29.99	761.7	54.7	12.6	66	E			3		3			0	0		Prof. C. Wagner.
Lemberg	29.00	736.5	29.99	761.8	48.6	9.2	87	N			2		10			0.055	1.4		Dr. T. Stanecki.
Pola	29.83	757.6	29.94	760.4	66.9	19.4	57	ESE			1		8cs			0	0		I.R.Hydrographic Office
Szathmar																			Johann Tamas, S. J.
Szegedin																			Karl Stancel.
Trieste	29.87	758.6	29.97	761.2	68.0	20.0	64	NNE			1		4			0	0		P. Busin.
Vienna	29.32	744.6	30.01	762.2	57.2	14.0	98	NNW			2		9			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.60	726.5	30.11	764.8	53.4	11.9	56	N			2		10			0	0		
Brussels	29.97	761.1	30.17	766.3	48.4	9.1	88	NNW			4		10		NE	0.008	0.20	Foggy	Royal Observatory.
Furnes	30.13	765.4	30.16	766.0	53.6	12.0	85	NNE			2		9			0	0		
Maeseyck	30.00	762.1	30.13	765.4	55.0	12.8	77	NW			2		7			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer.
Aberdeen	30.00	762.0	30.10	764.5	55.0	12.8		S	19	8.5			4			0	0	Hazy	W. Boswell.
Ardrossan	30.06	763.5	30.08	764.0	56	13.3		S			3		8					Raining	William McNeil.
Armagh, Observatory			30.10	764.5	57.3	14.1		S	9	4.0			10					Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.18	766.6	56.2	13.4		SE	15	6.7			8					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.10	764.5	60.3	15.7		Calm			0		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.78	756.4	30.17	766.3	55.5	13.1		E			0		5			0	0	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	83.8	28.8		NE			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.21	767.3	61.5	16.4		SSE			1		7					D. clouds	H. Todd. [H.C.
Cardington			30.23	767.8	58.4	14.7		E			1		8					Overcast	John McLaren.
Chatham, School M. E.	30.07	763.8	30.20	767.1	57.2	14.0		NE			2		6					Fine	Lt. W. G. Morris, R. E
Dartmoor	28.73	729.7	30.21	767.3	54.0	12.2		E			2		6					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.09	764.3	30.12	765.0	58	14.4		SSW			5		8					D. clouds	J. Mac Gowan.
Dover	30.16	766.1	30.19	766.8	57	13.9		ENE			3		4					½ clouded	J. Costello.
Eccles, (near Manchester)			30.20	767.1	59.2	15.1		SE	7.0	3.1								Blue sky	Thomas Mackereth.
Falmouth, Observatory	29.96	761.0	30.19	766.8	58.2	14.6		ESE			2		1					Foggy	The Staff.
Fort Napier, (Natal)	27.95	709.9	30.16	766.1	74.0	23.3		E			2		8					D. clouds	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.92	760.0	83	28.3		N			1		5					D. clouds	
Galway, Queen's College					56	13.3		ENE			2		6					D. clouds	R. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.90	759.4	29.93	760.2	71.3	21.8		W			4		1					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.89	759.2	30.09	764.3	56.0	13.3		SSE			5		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.20	767.1	30.21	767.3	55	12.8		ESE			2		2					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.04	763.0	30.21	767.3	56.4	13.6		SE			1		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.93	760.2	30.15	765.8	60	15.6		ENE			1		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.15	765.8	61	16.1		E			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	30.12	765.0	30.18	766.6	59	15.0		SSW			3		0					Blue sky	John Tilston.
Jersey	29.89	759.2	30.18	766.6	60.4	15.8		SSE			1		2			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory			30.20	767.1	57.1	13.9		ENE	8	3.6			6					Hazy	The Staff.
Kingstown	30.11	764.8	30.14	765.5	61	16.1		SSE			4		5					D. clouds	George Mitchell.
Leicester, Museum			30.23	767.8	54.7	12.6		Calm			0		0					Blue sky	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.87	758.7	29.94	760.5	77.8	25.4		NW			1		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.90	759.4	29.99	761.7	60	15.6		W			2		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.87	758.7	83.0	28.3		SW			2		8					Thunder	C. S. Duncombe.
Nottingham, Observatory	30.05	763.3	30.24	768.1	63.3	17.4		SSE			1		3c;k;ks		WNW; S	0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.69	754.1	30.21	767.3	60.0	15.6		E			2		9					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.21	767.3	57	13.9		ENE			1		9					Overcast	F. Lucas
Plymouth	30.11	764.8	30.18	766.6	59.2	15.1		E			1		4					D. clouds	John Merrifield.
Roche's Point	30.07	763.8	30.11	764.8															W. Kennedy.
Saint Ann's Head	30.02	762.5	30.18	766.6	58	14.4		SE			3		0					Blue sky	John C. Walker.
Sandwick Manse, (Orkneys)			29.99	761.7	55.5	13.1		S	13	5.8			10					Overcast	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.85	758.2	73.4	23.0		SW			2		8			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.98	761.5	30.22	767.6	56.6	13.7		S			2		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.12	765.0	30.15	765.8	65.4	18.6	55	SW			2		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					53.8	12.1		NE			0								Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.92	760.0	55	12.8		WSW			4		2					Blue sky	John Smith.
Stratfield Turgiss	29.97	761.2	30.19	766.8	59.6	15.3		E			1		8					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.95	760.7	56	13.3		WSW			1		8					Gloomy	John Trotter.
Truro, Royal Institution			30.18	766.6	65	18.3		SE			4		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.08	764.0	61.6	16.4		SSE	17	7.6			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		S			3		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.17	766.3	30.21	767.3	81.3	27.4	30	SSE	11	4.9		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.26	768.6	51.6	10.8	88	SW			1		7k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.13	765.3	58.3	14.6		SW			2		9ck			0	0	Cloudy	Andrew Gibb.
Mauritius, Observatory	30.02	762.5	30.21	767.3	71.5	21.9	54	SE	20.8	9.3			10			0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.21	767.3	30.30	769.6	59.2	10.1	98	SW	2	0.9			0			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.01	762.2	57	13.9		SW			4	5	3	SW		0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.98	761.5	52	11.1		S			8		10						Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Direction from—		
S. S. Algeria				Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 28′	7	NNW	D. clouds	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller, N. 45° 0′, W. 45° 25′	5	NNW	Squally	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
San José	26.21	665.7			69.8	21.0	89	E			2	1pc				1.0	25.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.27	768.8	30.32	770.0	51.6	10.9	79	E			4		9					
Fanöe	30.28	769.1	30.30	769.6	51.3	10.7	77	ESE			4		9					
Godthaab, (Greenland)																		
Stykkisholm, (Iceland)	28.98	736.0	29.02	737.1	45.3	7.4	93	SW			8		10					Raining
Thorshavn, (Faröe)	29.68	753.8	29.71	754.7	53.6	12.0	78	SW			6		5					
Vestervig	30.20	767.1	30.37	771.4	52.5	11.4	81	Calm			0		0					

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.67	753.6	30.22	767.6	57.2	14	30	NE			4		5		NW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.04	762.9	30.15	765.7	60.8	16.0	56	NE			2		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	29.84	758.0	29.92	760 0	65.1	18.4	49	N			3		2		E	0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.50	749.3	30.07	763.6	60.1	15.6	56	NE			2		2		NE	0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	29.95	760.8	30.11	764.9	59.9	15.5	55	NNE	2.2	1.0					NE	0	0		Albert Cheux.
Beauvais	29.87	758.8	30.16	766.0	57.0	13.9	52	ENE			2		0			0	0	Clear	Normal School.
Besançon	29.15	740.4	30.03	762.8	56.5	13.6	64	E			3		2		N	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.19	741.4	30.11	764.8	53.4	11.9	83	N			1		10n		N	0	0	Covered	Normal School.
Bourges, Normal School	29.51	749.5	30.06	763.4	57.2	14	67	NE			2		5		NNE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.87	758.6	30.08	764.1	68.5	20.3	65	Calm			0		1k			0	0		The Staff.
Carcassonne, Normal School	29.62	752.8	30.02	762.6	64.0	17.8	78	W			4		5		W	0	0	Cloudy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.50	749.4	30.07	763.6	61.5	16.4	87	N			2		4		SW	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.78	756.3	30.09	764.2	63.7	17.6	63	NE			2		5ck		NE	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28 67	728.3	30.03	762.8	53.2	11.8	74	NE			1		10		N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.21	741.8	30.08	764.0	57.9	14.4	53	NNE			2	2c		NNE		0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.80	731.6	29.95	760.6	64.9	18.3	43	E			4		8		E	0	0	¾ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.89	759.2	30.10	764.5	63.7	17.6	41	NE			1		8		NE	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.80	757.0	30.11	764.9	54.7	12.6	79	NNE			2		2		NE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.09	738.8	30.00	762.1	58.1	14.5	65	NE			1		5			0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.10	764.6	30.20	767.1	64.8	18.2	50	NE			2		5		NE	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.35	745.4	30.12	765.1	58.8	14.9	84	NNE			6		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.94	735.1	29.98	761.4	57.0	13.9	57	NNE			4		1		NE	0	0	Clear	Normal School.
Nismes, Normal School	29.72	755.0	29.93	760.1	64.4	18	72	N			4		4		N	0	0	Partly cl'dy	Boyer, Director.
Orleans, Normal School	29.64	752.9	30.02	762.6	57.6	14.2	58	NE			6		5		E	0.055	1.4	Cloudy	Bernard, Director.
Paris, Observatory	29.88	758.9	30.12	765.0	58.8	14.9	59	NE			1		1k		NE	0	0	Hazy	National Observatory.
Privas																			Normal School
Rochefort, Naval Obs'y	30.07	763.6	30.10	764.4	64.4	18.0	50	NE			3		5		E	0	0	½ covered	Lt. Decante, Director.
Rouen, Normal School	30.07	763.7	30.15	765.9	61.5	16.4	52	N			1		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	28.97	735.7	30.03	762.8	61.5	16.4	53	NW			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.29	743.9	30.00	761.9	58.1	14.5	86	NNW			1		10		NW	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.3	29.80	757.0	78.8	26										0.31	8.		L'Abbé Marchési.
Marseilles, Observatory			29.88	758.9	66.2	19.0	63	WSW			3		8			0	0	Very cloudy	The Staff.
Mont-Louis	24.79	629.7	30.11	764.7	48.2	9.0	50	NNW	18.6	8.33			4		W	0.024	0.6		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.84	757.8	30.11	764.8	58.6	14.8	62	NNE			3		2		NE	0	0		Marié Davy, Director.
Perpignan			29.95	760.7	63.3	17.4	30	NE	14.9	6.66			1		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.22	538 9			34.7	1.5		N			3		2					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.46	570.4			36.9	2.7		N			3		2			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.95	760.8	30.12	765.0	59.5	15.3	65	NE			1		1		NE	0	0		E. Renou.
Toulouse, Observatory	29.34	745.2	30.07	763.6	60.3	15.7	38	NNW			2		6			0	0		The Staff.
Tours	29.91	759.7	30.11	764.7	59.0	15.0	61	NE			2		5		NNE	0	0		C. Marquet.
Versailles, (near Paris)			30.13	765.2	59.0	15.0	64	NE			2		0			0.006	0.14	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.08	763.9	30.10	764.5	65.1	18.4	84	E	3.6	1.6			10k			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10	Clouds. Amount. Up'er 0-10	Low'r 0-10	Direction. Upper From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Berlin	30.04	763.0	30.21	767.3	55.6	13.1	62	E			1		6			0.164	4.2		Prof. Arndt.
Breslau	29.63	752.7	30.17	766.3	48.0	8.9	78	ENE			2		10			0.072	1.83		Royal University Obs'y.
Carlsruhe	29.63	752.5	30.05	763.3	59.0	15.0	58	NE			1		8			0	0		Albert Senz.
Cassel	29.60	751.9	30.21	767.4	56.8	13.8	59	ENE			3		7	NE		0	0		Dr. H. Möhl.
Crefeld	29.97	761.3	30.13	765.4	54.5	12.5	71	NE			4		8			0	0		Director Lose.
Emden	30.28	769.0	30.31	769.9	54.7	12.6	88	NE			2		0			0	0		Prof. Prestel.
Frankfort on the Main	29.77	756.2	30.10	764.4	59.7	15.4	40	NNE			2		3			0	0		Physical Society.
Friedrichshafen	28.60	726.3	30.03	762.8	53.2	11.8	70	NNE			6		3	NE		0	0		M. Wilhelm.
Hamburg	30.15	765.8	30.22	767.6	54.0	12.2	84	ENE			3		10			0.047	1.2	Foggy	Captain F. Hegemann.
Kiel	30.24	768.0	30.25	768.4	54.9	12.7	79	NE			4		3			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.22	767.6	30.29	769.4	50.4	10.2	67	E										Clear	Prof. E. Luther.
Köslin			30.23	767.8	52.9	11.6		NE			4		0			0.020	0.5		H. Müller.
Leipsic, Observatory	29.76	756.0	30.19	766.9	48.2	9.0	99	N			1		10			0	0		Prof. Bruhns.
Memel, Naval School	30.30	769.7	30.35	770.9	48.7	9.3	43	ENE			3		1cs						Reinbrechtvon Skalweit.
Neufahrwasser	30.28	769.1	30.30	769.5	49.1	9.5	79	ENE			1		7	NE		0	0		A. Lothes.
Posen	29.94	760.5	30.23	767.8	53.6	12.0	57	SE			5		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.52	749.7	30.07	763.6	56.5	13.6	64	NE			4		2			0	0		Dr. Schur.
Stuttgart	29.11	739.3	30.05	763.2	54.9	12.7	67	N			1		5	E		0	0		Prof. Schoder.
Treves, (Trier)	29.65	753.2	30.18	766.6	59.2	15.1	48	E			3		0			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.55	725.1	30.04	763.1	56.8	13.8	51	NE			1		6		W	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.23	767.8	30.28	769.1	54.5	12.5	76	NE			3		4					Fair	E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.54	750.2	29.92	759.9	75.4	24.1		SW										½ clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.78	756.5	29.84	757.8	84.9	29.4	66	ESE	43.0?	19.2?			1			0	0	D. clouds	
Deesa	29.45	748.1	29.93	760.2	81.5	27.5	65	SE					10	SE				Drizzling	
Bombay	29.86	758.3	29.89	759.3	82.2	27.9	89	SSE	26.0	11.6			10	N	S	0.01	0.3	Overcast	
Poona	27.87	707.9	29.88	758.9	77.4	25.1	84	S					10		E	0.01	0.3	Thunder	
Lahore	29.03	737.2	29.75	755.7	89.6	32.0	47	Calm	0.9	0.4			3			0	0	Blue sky	
Belgaum	27.41	696.2	29.96	761.0	75.2	24.0	86	W	10.0	4.5			9		W			Showery	
Bangalore																			
Roorkee	28.86	733.0	29.74	755.3	91.2	32.9	41	Calm	3.3	1.5						0	0		
Agra	29.22	742.1	29.76	756.0	94.7	34.8	23	N								0	0		
Trichinopoly																			
Nagpur	28.80	731.6	29.84	757.9	85.3	29.6	47	S	2.2	1.0			9			0	0	Gloomy	
Madras																			
Lucknow	29.44	747.8	29.81	757.1	92.9	33.8	42	E	2.1	0.9			10			0	0	Overcast	
Allahabad	29.49	749.0	29.80	756.8	88.7	31.5	56	Calm	1.0	0.4			0			0	0	Blue sky	
Patna	29.68	753.9	29.86	758.5	86.6	30.3	61	E	1.8	0.8			4	SE	SE	0	0	D. clouds	
Hazaribagh	27.85	707.3	29.85	758.2	81.0	27.2	69	E	6.4	2.9			5		N	0	0	Foggy	
Cuttack	29.80	756.9	29.88	759.0	85.8	29.9	69	ESE	2.4	1.1			4			0	0	D. clouds	
Calcutta (Alipore)	29.86	758.5	29.88	759.0	82.5	28.1	81	W	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.48	748.9	29.87	758.8	79.0	26.1	73	ESE	2.5	1.1			0			0	0	Blue sky	
Chittagong	29.84	757.9	29.93	760.2	75.6	24.2	82	ENE	8.1	3.6			5			0	0		
Sibsagar	29.58	751.3	29.92	759.8	79.7	26.5	82	ENE	1.5	0.7			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.46	722.7	29.80	757.0	85.0	29.4	67	N	3.3	1.5				N		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.13	562.2	30.00	762.0	29.7	— 1.3	100	E			4		10			Blank	Blank		Ab. Dom. Morgini.
Stelvio	22.12	561.9	30.01	762.2	33.8	1.0		NE			1		10			0.110	2.8		Signora Ernesta Manfredi.
Udine	29.54	750.2	29.95	760.6	65.1	18.4	45	S	1.3	0.6			5			0	0		Prof. Giovanni Clodig.
Padua	29.84	757.8	29.95	760.6	62.6	17.0	51	E	4.9	2.2			9	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.76	755.8	29.95	760.7	63.5	17.5	57	N	1.3	0.6			2	W		0.067	1.7		Conte Alm. Da Schio.
Verona	29.72	755.0	29.95	760.6	63.5	17.5	70	SE	4.3	1.9			10			0.276	7.0		Dott. B. Bertoncelli.
Bergamo	28.66	727.9	29.97	761.2	57.2	14.0	76	W			2		9			0	0		Prof. Trionfini Carlo.
Domodossola	28.95	735.3	29.98	761.4	54.1	12.3	85	Calm			0		10			0.654	16.6		Prof. Giuseppe Calza.
Milan	29.47	748.4	29.98	761.5	59.9	15.5	64	NE			1		8	SE		0.256	6.5		Ab. Gio. Capelli.
Pavia	29.63	752.6	29.98	761.4	58.5	14.7	74	E			4		9	E		0	0		Prof. Gio. Cantoni.
Moncalieri	29.09	738.9	30.00	762.0	53.6	12.0	90	NNW	1.3	0.6			9	E		0	0		Prof. P. F. Denza.
Mondovi	28.07	713.0	29.99	761.7	55.0	12.8	61	NW			4		10			0.043	1.1		Prof. D. C. Bruno.
Porto Maurizio	29.70	754.4	29.92	760.0	66.7	19.3	47	E			6		6	SW		0	0		Prof. L. Vassallo.
Genoa	29.77	756.1	29.94	760.4	65.8	18.8	47	N	6.3	2.8			4	SW		0.488	12.4		Prof. G. M. Garibaldi
Piacenza	29.72	754.9	29.98	761.4	59.0	15.0	71	N	0.7	0.3			9	W		0.189	4.8		Dott. G. Manzi.
Parma	29.67	753.6	29.98	761.6	62.1	16.7	54	ENE			2		8			0	0		Prof. P. Pigorini.
Florence	29.69	754.0	29.94	760.5	69.8	21.0	46	E			2		2			0	0		Cav. F. Meucci.
Leghorn	29.82	757.5	29.91	759.6	68.4	20.2	51	W	1.8	0.8			3	S		0	0		Prof. P. Monte.
Siena	28.73	729.8	29.94	760.4	64.6	18.1	53	SW	0	0			5	SW		0	0		Prof. L. Toscani.
Urbino	28.39	721.1	29.95	760.8	63.5	17.5	51	SE			2		3			0	0		Prof. P. Serpieri.
Pesaro	29.90	759.4	29.95	760.6	64.2	17.9	74	SW	6.3	2.8			10			0	0		Prof. Luigi Guidi.
Ancona	29.85	758.1	29.95	760.8	65.8	18.8	66	SE			4		4			0	0		Prof. F. DeBosis.
Grosseto	29.84	757.8	29.95	760.6	71.2	21.8	52	ENE			4		7	SE		0	0		Avv. P. Ponticelli.
Rome	29.78	756.3	29.95	760.7	62.8	17.1	83	ESE	4.3	1.9			10			0.236	6.0		Profs. P. Secchi & L. Respighi
Naples, O. U.	29.78	756.4	29.98	761.4	75.6	24.2	60	SW			4		10	SW		0.039	1.0		Prof. L. Palmieri.
Lecce	29.58	751.3	29.83	757.6	71.2	21.8	66	SE	1.3	0.6			3			0.012	0.3		Prof. C. De Giorgi.
Cosenza	29.11	739.5	29.99	761.7	72.7	22.6	57	SE	0	0			5			0	0		Prof. F. D. Conti.
Cagliari	29.62	752.3	29.81	757.1	71.6	22.0	63	S			2		9	W		0.236	6.0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.84	757.8	29.88	759.0	72.7	22.6	60	SE			2		5			0	0		Prof. F. Cafiero.
Palermo	29.66	753.4	29.91	759.7	68.5	20.3	60	NE	4.9	2.2			10			0	0		Prof. G. Cacciatore.
Caltanissetta	28.00	711.2	29.91	759.8	66.7	19.3	56	WNW			4		5			0.016	0.4		Prof. A. Pagani.
Syracuse	29.82	757.5	29.90	759.4	72.5	22.5	67	SE			1		8	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.45	747.9	30.00	762.0	68.5	20.3	58	NE	0	0			10			0.008	0.2		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.81	757.2	29.91	759.7	59.0	15.0	91	W	2.5	1.1		3c				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.1	30.16	766.1	51.8	11.0	67	Calm	0	0		3c	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.20	767.0	30.20	767.0	55.4	13.0		ENE			4					0.012	0.3		
Groningen	30.17	766.3	30.23	767.7	52.0	11.1		ENE			2					0	0		
Helder	30.21	767.2	30.21	767.2	53.6	12.0		ENE			2					0	0		
Hellevoetsluis			30.18	766.5	56.7	13.7	60	ENE			5								
Utrecht	30.15	765.8	30.20	767.0	56.5	13.6	66	ENE			3		5			0	0	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.20	767.1	30.26	768.5	50.0	10.0	67	S	20.8	9.3			4			0	0		
Brönö	30.15	765.8	30.19	766.8	56.1	13.4	62	E	7	3			8			0	0		
Christiania	30.23	767.8	30.38	771.6	47.3	8.5	77	NW	4	2			7			0	0		
Tromsö	30.11	764.7	30.15	765.8	45.3	7.4	69	SW	7	3			10			0.299	7.6		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.45	748.1	29.64	752.9	68.9	20.5	96	NNE	9.8	4.4			7			0.197	5.0		Dr. J. A. Sampaio.
Campo Major	28.98	736.2	30.00	762.0	66.7	19.3	50	N	9.4	4.2			4			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.96	761.0	30.03	762.8	74.3	23.5	77	SE	4.3	1.9			8			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.68	753.9	30.04	762.9	65.7	18.7	50	NNE	17.4	7.8			2	NW		0.012	0.3		The Staff.
Ponta Delgada, (Azores)	29.48	748.8	29.55	750.6	69.8	21.0	89	SE	12.5	5.6			10			0.929	23.6		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell: Height scale 0–9	Sea or swell: Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.74	755.3	30.17	766.2	50.4	10.2	67	ENE	11	5			9						Astronomical Obs.
Wilna	29.87	758.8	30.30	769.7	46.9	8.3	40	ENE	7	3			0						Astronomical Obs.
Dorpat	30.20	767.1	30.45	773.5	41.0	5.0	61	NE	7	3			5						Physical Cabinet.
St. Petersburg	30.41	772.5	30.43	772.9	40.6	4.8	53	N	4	2			4						Central Physical Obs.
Kuopio	30.08	764.1	30.42	772.6	37.8	3.2	97	SW	7	3			8						Ch. Forsten.
Kieff	29.32	744.6	29.91	761.1	43.5	6.4	90	NNE	9	4			10						Physical Cabinet.
Nikolaiev	29.67	753.7	29.74	755.5	59.0	15.0	98	ENE	4	2			10					Raining	Kurdukof.
Kertch	29.78	756.5	29.80	757.0	69.1	20.6	88	S	7	3			10						Lagorio.
Moscow	29.73	755.1	30.30	769.5	41.0	5.0	48	NNW	7	3			4						Meteorological Obs.
Lugan	29.70	754.3	29.90	759.5	53.2	11.8	95	E	4	2			10			Blank	Blank		Meteorological Obs.
Archangel	30.34	770.6	30.36	771.1	37.0	2.8	82	NW	18	8			10						Ogorodnikof.
Tiflis	28.67	728.1	30.03	762.7	77.9	25.5	39	Calm	0	0			0						Physical Observatory.
Astrakhan	29.90	759.4	29.82	757.3	65.7	18.7	68	ESE	7	3			1						Sebastianof.
Kasan	29.97	761.1	30.24	768.2	38.1	3.4	58	Calm	0	0			7						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	29.27	743.4	30.26	768.6	31.5	— 0.3	70	WSW	9	4			9						Meteorological Obs.
Nukuss	29.97	761.3	30.21	767.2	57.9	14.4	48	ENE	4	2			1						
Kasaly																			Bobrof.
Tashkend	28.70	729.0	30.43	772.9	54.3	12.4	91	Calm	0	0			4						Michelson.
Barnaul	29.93	760.2	30.47	773.8	44.1	6.7	34	SW	9	4			5						Meteorological Obs.
Yeniseisk	30.11	764.9	30.26	768.6	36.1	2.3	79	W	2	1			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.99	761.7	30.13	765.3	60.1	15.6	50	SSE	13	6			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					40.5	4.7	81	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.75	704.9	29.94	760.5	63.7	17.6	48	NE	4.1	1.83		0	1			0.614	15.6	Almost clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.83	757.7	29.91	759.8	77.7	25.4	83	SW	5.2	2.3		0	1ks			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.89	759.2	29.99	761.7	67.1	19.5	61	WNW	15.2	6.81		1	2	W	W	0.013	0.3		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.86	758.4	81.9	27.7	85	SE	0	0		7s	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	30.39	771.8	30.48	772.8	39.6	4.2	.....	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	30.34	770.6	30.39	771.9	45.7	7.6	86	S	.....	.....	2	.....	5	.....	.....	0	0	.....	
Hernosand	30.34	770.5	30.38	771.8	42.8	6.0	93	SW	.....	.....	2	.....	9	.....	.....	0.079	2.0	Raining	
Stockholm	30.23	767.8	30.41	772.3	46.8	8.2	73	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	
Wisby	30.26	768.6	30.32	770.1	47.5	8.6	52	SE	.....	.....	6	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.34	770.6	30.41	772.5	49.6	9.8	59	SSW	6.0	2.7	.....	.....	8	.....	E	0.002	0.05	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.59	726.1	30.01	762.2	55.4	13.0	74	N	.....	.....	2	.....	9	.....	.....	0.346	8.8	Covered	The Observatory.
Zurich	28.39	721.2	30.04	762.9	52.3	11.3	74	E	.....	.....	1	.....	6	.....	.....	0	0	Cloudy	The Observatory.
.....																			
.....																			
.....																			

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —0.3 mm; Thermometer, —2.0 cent.; Relative Humidity, +5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.90	759.5	78.3	25.7	47	WSW	7	3.0	.....	.....	9	.....	SW	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.94	760.5	74.8	23.8	.....	S	.....	.....	1	.....	0	.....	.....	Blank	Blank	.....	B. Stefanidès.
Valona	.....	.....	30.02	762.4	70.2	21.2	.....	W	.....	.....	2	.....	10	.....	.....	1.42	36.	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.94	760.5	86.5	30.3	52	NW	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.86	758.4	29.93	760.2	51.4	10.8	96	SW	16	7.2	.....	.....	10	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.61	752.1	64	17.8	.....	SW	5	2.2	.....	.....	10s	.....	SW	0.02	0.5	Light rain	W. R. Bigg.
*Chatham, N. B.	.....	.....	30.01	762.2	51	10.6	96	SE	8	3.6	.....	.....	10n	.....	S	0.02	0.5	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.10	764.5	53	11.7	82	SE	13	5.8	.....	.....	10ks	.....	Calm	0.175	4.45	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.38	746.2	29.56	750.8	65.4	18.6	73	SW	.....	.....	3	.....	10s	.....	.....	0.042	1.07	Dull	James Smith, M. A.
Dalhousie, N. B.	29.88	758.9	29.92	760.0	48	8.9	94	E	.....	.....	3	.....	.....	.....	.....	0	0	Threatening	H. A. Johnson.
Esquimault, B. C.	29.90	759 4	29.94	760.5	47.3	8.5	100	NE	.....	.....	.....	.....	10	.....	.....	0.23	5.8	Rainy	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.77	756.1	52	11.1	79	SW	18	8.0	.....	5k	5n	S	S	0	0	Threatening	J. McWilliams.
Fredericton, N. B.	29.94	760.5	30.01	762.2	54.2	12.3	93	SE	6	2.7	.....	.....	10n	.....	SE	0.01	0.3	Light rain	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.04	763.0	30	—1.1	98	W	12	5.4	.....	5k	5ks	W	W	0	0	Cloudy	James Stewart.
Goderich, Ontario	28.82	732 0	29.60	751.8	54.9	12.7	86	NW	.....	.....	5	.....	10n	.....	.....	.....	.....	Raining	H. J. Strang, M. A
Granton, Ontario	28.48	723.4	29.55	750.6	54	12.2	93	W	.....	.....	3	.....	10n	.....	E	0	0	Cloudy	James Grant.
*Halifax, N. S.	29.94	760.5	30.07	763.8	56	13.3	92	SE	9	4.0	.....	.....	10n	.....	SE	0.006	0.15	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.15	740.4	29.50	749.3	67.5	19.7	94	SW	.....	.....	4	10cs	0	S	.....	0.02	0.5	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	30.23	767.8	30.25	768.3	43	6.1	67	W	.....	.....	2	0	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.29	744.0	29.64	752.8	64	17.8	92	S	23	10.3	.....	.....	10n	.....	S	0.15	3.8	Light rain	S. Woods, M. A
*Montreal, Quebec	29.45	748.0	29.65	753.1	61	16.1	84	S	12	5.4	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.77	730.7	29.44	747.8	54	12.2	93	W	24	10.7	.....	.....	10n	.....	W	0.16	4.1	Light rain	Rev. R. Mosley.
Peterboro, Ontario	28.78	731.0	29.49	749.0	64.7	18.2	89	S	.....	.....	2	.....	10n	.....	.....	0.18	4.6	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	28.87	733.3	29.53	750.0	65	18.3	94	S	20	8.9	.....	.....	10n	.....	S	0.22	5.6	Light rain	H. Morgan.
Port Hastings, N. S.	30.08	764.0	30.13	765.3	52.6	11.4	.....	SE	10	4.5	.....	.....	.....	.....	.....	0	0	Dark	Peter Grant.
Port Stanley, Ontario	28.95	735.3	29.58	751.3	59	15.0	90	W	36	16.1	.....	.....	10n	.....	NW	Inap.	Inap.	Light rain	M. Payne.
*Quebec, Quebec	29.46	748.3	29.78	756.4	53	11.7	86	SE	16	7.2	.....	.....	10n	.....	SE	0.01	0.3	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	28.91	734.3	29.35	745.5	58	14.4	91	SE	10	4.5	.....	.....	10s	.....	SW	Inap.	Inap.	Light rain	W. H. McIntyre.
St. John, N. B.	29.87	758.7	30.04	763.0	54	12.2	93	SE	4	1.8	.....	.....	10ks	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	28.83	732.3	29.51	749 5	53	11.7	92	NW	15	6.7	.....	.....	10s	.....	.....	0.46	11.7	Light rain	K. Stewart.
Stayner, Ontario	.....	.....	29.49	749.0	53	11.7	100	NW	8	3.6	.....	.....	10n	.....	NW	0.34	8.6	Light rain	R. J. Cole.
Stratford, Ontario	28.28	718.3	29.53	750.0	53.9	12.2	94	NW	20	8.9	.....	.....	10n	.....	.....	.....	.....	Raining	C. J. MacGregor, M. A.
*Sydney, C. B.	30.17	766.3	30.20	767.1	49	9.4	85	SE	4	1.8	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	D. C. Hill.
*Toronto, Ontario	29.12	739.6	29.49	749.0	64	17.8	92	S	13	5.8	.....	.....	10n	.....	SW	0.14	3.6	Light rain	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Jona E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	45.0	7.2	72	NE	.....	.....	.....	0	0	.....	.....	0.05	1.3	Fair	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.66	753.4	29.88	758.9	60	15.6	88	S	5	2.2			10n		Calm	0.10	2.5	Light rain	
Alpena, Michigan	28.88	733.5	29.51	749.5	48	8.9	85	W	12	5.4		0	2ks		W	0.38	9.7	Fair	
Atlantic City, New Jersey	29.72	754.9	29.74	755.4	70	21.1	100	SE	22	9.8			10s		SE	0	0	Cloudy	
Augusta, Georgia	29.25	742.9	29.42	747.3	71	21.7	92	NW	10	4.5			10s		NW	2.08	52.8	Cloudy	
Baltimore, Maryland	29.63	752.6	29.68	753.9	70	21.1	95	SE	10	4.5			10n		SE	0.06	1.5	Light rain	
Barnegat, New Jersey	29.74	755.4	29.76	755.9	70	21.1	95	SE	22	9.8		9cs	Haze	SW	Calm	0	0	Cloudy	
Bismarck, Dakota	28.37	720.6	30.12	765.0	30	— 1.1	89	NW	4	1.8			10s		W	Inap	Inap.	Cloudy	
Boise City, Idaho	27.17	690.1	29.75	755.6	51	10.6	40	E	1	0.4			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	29.76	755.9	29.91	759.7	57	13.9	93	SE	11	4.9			10s		SE	0.08	2.0	Cloudy	
Brackettville, Texas	28.97	735.8	30.00	762.0	60	15.6	59	NW	11	4.9		8k	0	NW		0	0	Fair	
Breckenridge, Minnesota	29.12	739.6	30.18	766.6	23	— 5.0	86	NW	8	3.6		0	0			0.03	0.8	Clear	
Brownsville, Texas	29.86	758.4	29.92	760.0	76	24.4	95	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Buffalo, New York	28.83	732.3	29.49	749.0	65	18.3	94	S	6	2.7			10n		S	0.11	2.8	Light rain	
Burlington, Vermont	29.52	749.8	29.77	756.1	64	17.8	67	S	10	4.5			10s		S	0	0	Cloudy	
Cairo, Illinois	29.64	752.8	30.03	762.7	51	10.6	59	N	16	7.2		1k	0	N		0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.79	680.4	30.28	769.1	53	11.7	60	Calm				0	0			0	0	Clear	
Campo, California	27.32	693.9	29.89	759.2	35	1.7	80	Calm	0	0		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.58	751.3	29.59	751.6	75	23.9	85	SE	28	12.5			10s		SE	0.04	1.0	Cloudy	
Cape Henry, Virginia	29.58	751.3	29.60	751.8	73	22.8	90	SE	30	13.4			10s		SE	0.09	2.3	Cloudy	
Cape Lookout, N. Carolina	29.52	749.8	29.54	750.3	77	25.0	100	SE	42	18.8			10n		SE	0.31	7.9	Light rain	
Cape May, New Jersey	29.66	753.4	29.69	754.1	72	22.2	90	E	26	11.6			10s		SE	0	0	Threatening	
Charleston, South Carolina	29.39	746.5	29.45	748.0	73	22.8	90	SW	14	6.3			10s		SW	1.79	45.5	Threatening	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	29	— 1.7	67	S	8	3.6			10s		Calm	0	0	Cloudy	
Chicago, Illinois	29.18	741.2	29.87	758.7	48	8.9	63	NW	12	5.4		10k	0	NW		0.93	23.6	Cloudy	
Cincinnati, Ohio	29.03	737.3	29.65	753.1	60	15.6	65	N	14	6.3		0	9ks		N	Inap.	Inap.	Cloudy	
Cleveland, Ohio	28.94	735.1	29.63	752.6	61	16.1	94	W	24	10.7			10ks		W	0.02	0.5	Threatening	
Concho, Texas	28.25	717.5	29.98	761.5	47	8.3	48	NE	24	10.7		8c	0	NE		0	0	Cloudy	
Corsicana, Texas	29.60	751.8	30.07	763.8	53	11.7	54	N	14	6.3			10s		N	0.02	0.5	Cloudy	
Davenport, Iowa	29.40	746.7	30.06	763.5	41	5.0	73	NW	10	4.5		0	0			0.32	8.1	Clear	
Denison, Texas	29.35	745.5	30.17	766.3	45	7.2	68	N	11	4.9		0	0			0	0	Clear	
Denver, Colorado	24.84	630.9	30.06	763.5	30	— 1.1	78	S	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	28.98	736.1	29.62	752.3	54	12.2	83	NW	12	5.4			10s		NW	0.17	4.3	Cloudy	
Dodge City, Kansas	27.64	702.0	30.07	763.8	28	— 2.2	88	NW	8	3.6		0	0			0.02	0.5	Clear	
Dubuque, Iowa	29.30	744.2	30.01	762.2	40	4.4	82	NW	6	2.7		0	0			0.40	10.2	Clear	
Duluth, Minnesota	29.26	743.2	29.95	760.7	38	3.3	71	N	2	0.9		5k	0	N		0.28	7.1	Fair	
Eagle Pass, Texas	29.33	745.0	30.06	763.5	63	17.2	28	NW	20	8.9		5ck	0	NW		0	0	Fair	
Eastport, Maine	29.92	760.0	29.99	761.7	54	12.2	93	S	14	6.3			10s		S	0	0	Cloudy	
Erie, Pennsylvania	28.84	732.5	29.51	749.5	67	19.4	90	S	17	7.6			10n		SW	0.01	0.3	Light rain	
Escanaba, Michigan	29.68	738.6	29.72	754.9	41	5.0	65	NW	16	7.2		5k	0	NW		1.35	34.3	Fair	
Florence, Arizona	28.34	719.8	29.94	760.5	70	21.1	52	S				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.12	612.6	30.12	765.0	49	9.4	57	NE	4	1.8		0	0			0	0	Clear	
Fort Craig, New Mexico	25.65	651.5			49	9.4	57	N	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.63	752.6	30.19	766.8	42	5.6	83	N	3	1.3		0	0			0	0	Clear	
Fort Griffin, Texas	28.97	735.8	30.28	769.1	45	7.2	60	N	12	5.4		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.00	736.6	30.15	765.8	41	5.0	65	N	12	5.4		0	0			0	0	Clear	
Fort Sully, Dakota	28.46	722.9	30.21	767.3	27	— 2.8	77	Calm	0	0			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.86	758.4	29.90	759.4	69	20.6	90	N	30	13.4			10s		N	0	0	Cloudy	
Grand Haven, Michigan	29.12	739.6	29.76	755.9	50	10.0	71	NW	32	14.3			10s		NW	1.00	25.4	Cloudy	
Indianapolis, Indiana	29.10	739.1	29.87	758.7	49	9.4	64	NW	16	7.2			10s		NW	0	0	Cloudy	
Indianola, Texas	29.93	760.2	29.96	761.0	67	19.4	65	N	40	17.9		5k	0	N		0.07	1.8	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	29.59	751.6	29.62	752.3	75	23.9	76	SW	12	5.4		2k	0	SW		0.98	24.9	Fair	
Keokuk, Iowa	29.43	747.5	30.06	763.5	44	6.7	67	NW	9	4.0		0	0			0.69	17.5	Clear	
Key West, Florida	29.82	757.4	29.86	758.4	81.0	27.2	74	W	18	8.0		2c	0	Calm		0.20	5.1	Fair	
Kittyhawk, North Carolina	29.59	751.6	29.61	752.1	75	23.9	95	SE	34	15.2			10s		S	0	0	Cloudy	
Knoxville, Tennessee	28.67	728.2	29.62	752.3	66	18.9	78	NW	12	5.4		0	3ks		NW	1.05	26.7	Fair	
La Crosse, Wisconsin	29.24	742.7	30.00	762.0	40	4.4	73	W	8	3.6		8k	0	W		0.32	8.1	Clearing	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	56	13.3	35	SW	6	2.7		2c	0	Calm		0	0	Clear	
Laredo, Texas					68	20.0	60	NW	13	5.8		10ck	0	N		0	0	Cloudy	
Leavenworth, Kansas	29.38	746.2	30.26	768.6	37	2.8	71	NW	8	3.6		0	0			0.71	18.0	Clear	
Los Angeles, California	29.59	751.6	29.92	760.0	65	18.3	78	N	1	0.4			10s		N	0	0	Cloudy	
Louisville, Kentucky	29.25	742.9	29.79	756.7	56	13.3	68	NW	20	8.9			10ks		NW	0	0	Cloudy	
Lynchburg, Virginia	28.78	731.0	29.41	747.0	70	21.1	100	NE	8	3.6			10n		Calm	2.80	71.1	Heavy rain	
Maricopa Wells, Arizona					56	13.3	43	E				0	0			0	0	Clear	
Marquette, Michigan	29.01	736.8	29.71	754.6	38	3.3	80	W	20	8.9			10s		W	0.96	24.4	Cloudy	
Mason, Texas	28.48	723.4	30.26	768.6	50	10.0	44	NW	16	7.2		0	2s			0	0	Clear	
Memphis, Tennessee	29.69	754.1	30.00	762.0	57	13.9	68	N	20	8.9		0	5s		NW	Inap.	Inap.	Fair	
Milwaukee, Wisconsin	29.22	742.2	29.91	759.7	44	6.7	67	NW	20	8.9		5ks	0	NW		0.80	20.3	Fair	
Mobile, Alabama	29.89	756.9	29.84	757.9	69.5	20.8	86	NW	9	4.0		0	0			0	0	Clear	
Montgomery, Alabama	29.53	750.0	29.76	755.9	67	19.4	90	NW	8	3.6		0	Haze		NW	0.23	5.8	Clear	
Morgantown, West Virginia	28.54	724.9	29.53	750.0	65	18.3	94	SE	7	3.1			10n		SE	1.53	38.9	Light rain	
Mt. Washington, N. H.	25.70	602.0	30.06	763.5	44	6.7	100	SW	50	22.4			Fog		SW	0	0	Foggy	
Nashville, Tennessee	29.32	744.7	29.84	757.9	61	16.1	71	NW	13	5.8		5k	0	NW		Inap.	Inap.	Fair	
New Haven, Connecticut	29.71	754.6	29.82	757.4	64	17.8	94	E	16	7.2			10s; fg		E	0.01	0.3	Threatening	
New London, Connecticut	29.85	758.2	29.90	759.4	62	16.7	94	E	12	5.4			10s		E	0.03	0.8	Cloudy	
New Orleans, Louisiana	29.78	756.4	29.84	757.9	74	23.3	85	NW	3	1.3		2k	5ks	W	N	0	0	Fair	
Newport, Rhode Island	29.83	757.7	29.88	758.9	63	17.2	94	E	10	4.5			10ks		SE	0.02	0.5	Threatening	
New York, New York	29.64	752.6	29.80	756.9	68	20.0	94	SE	19	8.5			10s; fg		Calm	0.03	0.8	Threatening	
Norfolk, Virginia	29.54	750.3	29.59	751.6	73	22.8	100	SE	24	10.7			10n		S	0.07	1.8	Light rain	
North Platte, Nebraska	27.26	692.4	29.98	761.5	26	— 3.3	83	SW	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.83	757.7	29.87	758.7	48	8.9	92	N	2	0.9			10n		Calm	1.02	25.9	Heavy rain	
Omaha, Nebraska	29.11	739.4	30.24	768.1	33	0.6	90	W	4	1.8		0	0			0.29	7.4	Clear	
Oswego, New York	29.31	744.5	29.61	752.1	65	18.3	86	SE	8	3.6			10n		Calm	0.10	2.5	Light rain	
Pembina, Dakota	29.23	742.4	30.10	764.5	27	— 2.8	88	W	6	2.7		2ck	0	Calm		0.07	1.8	Clear	
Philadelphia, Pennsylvania	29.68	753.9	29.72	754.9	71	21.7	90	SE	13	5.8			10ks; hz		SE; Calm	Inap.	Inap	Cloudy	
Phœnix, Arizona					61	16.1	45	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.74	450.6	29.95	760.7	19	— 7.2	52	W	42	18.8		0	1s		Calm	0	0	Clear	
Pioche, Nevada	24.07	611.4	29.84	757.9	38	3.3	33	S	2	0.9		0	0			0	0	Clear	
Pittsburg, Pennsylvania	28.78	731.0	29.54	750.3	66	18.9	94	NE	1	0.4			10n		Calm	1.15	29.2	Light rain	
Port Huron, Michigan	28.95	735.3	29.59	751.6	53	11.7	79	NW	12	5.4			10ks		NW	0.28	7.1	Cloudy	
Portland, Maine	29.88	758.9	29.93	760.2	56	13.3	87	SE	4	1.8			10s		Calm	0.03	0.8	Cloudy	
Portland, Oregon	29.87	758.7	29.93	761.0	49	9.4	100	E	1	0.4			10n		Calm	0.90	22.9	Light rain	
Prescott, Arizona	24.81	630.2	30.17	766.3	50	10.0	37	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.80	756.9	29.81	757.2	78	25.6	82	W	20	8.9			10n		W	0.19	4.8	Light rain	
Red Bluff, California	29.62	752.3	29.97	761.2	59	15.0	43	Calm	0	0		2k	2s	Calm	Calm	0	0	Fair	
Rochester, New York	28.94	735.1	29.52	749.8	65	18.3	83	S	12	5.4		0	10n		S	0.03	0.8	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.42	747.3	29.98	761.5	55	12.8	93	Calm	0	0			10s		Calm	0.32	8.1	Cloudy	
Sacramento, California	29.90	759.4	29.98	761.5	52	11.1	53	SE	1	0.4		0	0			0	0	Clear	
St. Louis, Missouri	29.50	749.3	30.08	764.0	45	7.2	76	NW	12	5.4		0	0			0.08	2.0	Clear	
St. Marks, Florida	29.68	753.9	29.70	754.4	71	21.7	85	NW	8	3.6		0	0			Blank	Blank	Clear	
St. Paul, Minnesota	29.17	740.9	30.03	762.7	33	0.6	79	NW	9	4.0		0	0			0.23	5.8	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.67	652.0	30.00	762.0	44	6.7	36	W	2	0.9		5k	0	Calm		0	0	Fair	
San Antonio, Texas	29.34	745.2	29.92	760.0	63	17.2	51	N	12	5.4			10s		N	0	0	Cloudy	
San Diego, California	29.88	758.9	29.95	760.7	63	17.2	83	E	2	0.9			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.01	736.8	29.66	753.4	56	13.3	87	W	32	14.3			10n		W	0.10	2.5	Light rain	
Sandy Hook, New Jersey	29.76	755.9	29.79	756.7	70	21.1	95	SE	14	6.3			10s		SE	0	0	Cloudy	
San Francisco, California	29.95	760.7	30.02	762.5	55	12.8	80	SW	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.58	598.9	29.92	760.0	39	3.9	54	SE	8	3.6		Haze	2ks		W	0	0	Cloudy	
Savannah, Georgia	29.40	746.7	29.49	749.0	72	22.2	85	W	12	5.4			10s		W	2.09	53.1	Cloudy	
Shreveport, Louisiana	29.77	756.1	29.98	761.5	64	17.8	78	N	12	5.4			10s		N	0.30	7.6	Cloudy	
Smithville, North Carolina	29.42	747.3	29.45	748.0	76	24.4	90	S	22	9.8			10n		S	1.42	36.1	Light rain	
Springfield, Massachusetts	29.67	753.6	29.79	756.7	62	16.7	88	SE	3	1.3			10s		SE	0	0	Threatening	
Stanwix, Arizona					68	20.0	60	Calm				0	0			0	0	Clear.	
Stockton, Texas					53	11.7	51	NE	8	3.6		0	1s		Calm	0	0	Clear	
Thatcher's Island, Mass	29.88	758.9	29.93	760.2	58	14.4	93	SE	8	3.6			10s		S	0.06	1.5	Foggy	
Toledo, Ohio	29.03	737.3	29.68	753.9	56	13.3	62	W	16	7.2		0	8ks		W	0.05	1.3	Fair	
Tucson, Arizona	27.48	698.0	30.04	763.0	65	18.3	64	S				0	0			0	0	Clear	
Tybee Island, Georgia	29.44	747.8	29.47	748.5	70	21.1	95	SW	10	4.5			10ks		W	1.43	36.3	Threatening	
Umatilla, Oregon	29.08	753.9			48	8.9	92	NW	4	1.8			10s		Calm	0.13	3.3	Cloudy	
Vicksburg, Mississippi	29.66	753.4	29.91	759.7	70	21.1	90	N	7	3.1			10s		N	0	0	Cloudy	
Virginia City, Montana	24.23	615.4	29.71	754.6	32	0.0	79	Calm	0	0			10s		Calm	0	0	Cloudy	
Visalia, California	29.63	752.6	30.00	762.0	51	10.6	59	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C	29.53	750.0	29.64	752.8	70	21.1	95	SE	13	5.8			10n		SE	0.23	5.8	Light rain	
Wickenburg, Arizona					51	10.6	27	W				0	0			0	0	Clear.	
Wilmington, N. Carolina	29.38	746.2	29.45	748.0	74	23.3	95	S	10	4.5			10n		S	2.47	62.7	Light rain	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	28	—2.2	84	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Mass	29.88	758.9	29.93	760.2	63	17.2	88	SE	8	3.6			10s		SE	0	0	Threatening	
Yankton, Dakota	28.94	735.1	30.30	769.6	30	—1.1	83	W	5	2.2		0	0			0.01	0.3	Clear	
Yuma, Arizona	29.69	754.1	29.86	758.4	59	15.0	30	Calm	0	0		0	0			0	0	Clear.	
Sub-Series.																			
York Factory, B. A.	29.62	752.3	29.67	753.6	29.5	—1.4	95	NW	10	4.5		0	4s		SW	0.10	2.5	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.84	757.9	29.86	758.4	79	26.1	82	SW	3.6	1.6		2c	2ks	Calm	SW	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	80	26.7	78	Calm	0	0		8c	2cs	Calm		0	0		James Gall.
Santiago de Cuba, W. I.	29.91	759.7	29.92	760.0	81	27.2	79	Calm	0	0		4c	1s	Calm	Calm	0	0	Fine	T. W. Beattie.
Navassa, W. I.	29.85	758.2	29.93	760.2	83	28.3		SE			1					0.40	10.2	Cloudy	F. M Everett.
St. Thomas, W. I.					88	31.1	80	Calm				8cs	2ks	E		0	0		G. O. Gellich
Pt-a-Pitre, Guadeloupe, W. I.	29.78	756.4	29.80	756.9	81	27.2	83	SW				5c	0						L. Y. Bigard.
Paramaribo, D. Guiana, S. A.			30.00	762.0	84	28.9	75	E			2	0	5k			0.140	3.56	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			65.5	18.6	84	Calm			0		10n;s			0.03	0.8	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,192 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.8 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

*Rain-gauge overflowed.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.02	762.5	59	15.0	58	14.4	70	SW	12	5.4			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	29.90	759.4			72	22.2	85	W	7	3.1			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.97	761.2	62	16.7	56	13.3	87	NE			1		10			0.05	1.3				
Naval Hospital, Yokohama, Japan	29.80	756.9	68	20.0	62	16.7	86	Calm			0		4s; hz		SW	0	0			Clearing	
Adams, Montevideo, Uruguay	30.02	762.5	72	22.2	59	15.0	76	SW			1		0			Light	Light	None		Blue sky	
Alert, N. 39° 13′, E. 137° 16′	29.94†	760 5†	64	17.8	64	17.8	94	W			4–5		1		W			Moderate.	W	D. clouds	
Alliance, Constantinople, Turkey	30.03	762.7	75	23.9	73	22.8	76	S&W			1–2		5		S&W					Pleasant	
Ashuelot, Che-foo, China	30.20	767.1	64	17.8	59	15.0	49	N			3–5		2		N			Long; moderate.	NE	Squally	
Canonicus, New Orleans, La	29.88	758.9	53	11.7	75	23.9	86	WNW			2		8		NW					Cloudy	
Colorado, New York, N. Y	29.89	759.2	70	21.1	69	20.6	95	SE	13	5.8			1		SE	0.03	0.8			Foggy	
Despatch, Beikos Bay, Bosphorus	30.00	762.0	78	25.6	77	25.0	53	W			3–5		6		S&W			Smooth		Cloudy	
Franklin, Norfolk, Va	29.70	754.4	71	21.7	74	23.3	100	SSE	5	2.2			10		SSE	0.1	3.			Raining	
Frolic, Barbados, W. I	30.09	764.3	87	30.6	88	31.1	76	W			2		5k		Calm	0	0	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.92‡	760.0‡			75	23.9	95	SSW			1		9		Calm	0	0			D. clouds	
Kearsarge, N. 5° 55′, E. 93° 40′	29.98	761.5			83	28.3	87	WSW			2		2			0.2	5.	Smooth		Hazy	
Lackawana, Esquimault, B. C	30.02	762.5			50	10.0	86	N			1		9		N			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.95	760.7	77	25.0	77	25.0	82	SSE			2		10		SW	Light	Light	Smooth		Raining	
Michigan, Detroit, Michigan	29.17	740.9	69	20.6	56	13.3	75	N			3		10		NW					Cloudy	
Monocacy, Hakodadi, Japan	29.60	751.8	68	20.0	64	17.8	83	W			1		8		W	0	0	Smooth		D. clouds	
Monongahela, N. 35° 11′, W. 64° 56′	29.91	759.7	76	24.4	76	24.	77	ENE			4–6		k					Rough	S&E	Squally	
New Hampshire, Port Royal, S. C	29.62	752.3			72	22.2	95	SSW	18	8.0			10		SW	1.6	41.			D. clouds	
Omaha, Valparaiso, Chili	30.08	764.0	63	17.2	58.5	14.7	79	Calm	0	0			7		Calm	0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.06†	763.5†	68	20.0	67	19.4	94	SSE			2		10					Long	W	Misty	
Ossipee, N. 41° 16′, W. 72° 7′	29.91	759.7	70	21.1	65	18.3	94	E			4		10		E			Ground	E	Foggy	
Palos, Kintang, China	30.14	765.5	74	23.3	74	23.3	76	SSE			2		10		Calm	0	0	None		Cloudy	
Pensacola, Mare Island, Cal	30.12	765.0			62	16.7	77	SW			2		0			0	0			Clear	
Plymouth, Old Point Comfort, Va	29.88	758.9	78	25.6	74	23.3	90	ESE			6		10		E			Smooth		Cloudy	
Ranger, Nagasaki, Japan	30.00	762.0			67	19.4	60	W			1		6		Calm	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.81	757.2			78	25.6	95	N			4		4		NW					Showery	
Santee, Annapolis, Md	29.76	755.9	72	22.2	71	21.7	95	SE			5		10		SE	0.09	2.3			Raining	
St. Louis, League Island, Pa	29.75	755.6	71	21.7	70	21.1	90	SE	11	4.9			9		S	0	0			Cloudy	
Tennessee, Yokohama, Japan	29.82	757.4	70	21.1	67	19.4	79	NNW	8	3.6			4		S&W	0	0	Smooth		D. clouds	
Trenton, Marseilles, France	30.00	762.0	66	18.9	65	18.3	68	NW	10	4.5			9		N&E	0	0			D. clouds	
Vandalia, Smyrna, Turkey	29.98	761.5	77	25.0	75	23.9	90	Calm			0		10		Calm					Showery	
Wabash, Boston, Mass	29.98	761.5	60	15.6	60	15.6	88	SE	7	3.1			10		Calm	0.05	1.3			Drizzling	
Wyoming, Washington, D. C	29.86†	758.4†	74	23.3	72	22.2		S&E			2		10		S&E					Raining	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Yokohama, Japan.			30.08*	764.0*	64	17.8	89	NW			1		2		NW	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 36° 38′, E. 161° 47′			30.25†	768.3†	68	20.0		ESE			6		8		ESE	Chop.	NE to SE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 27° 34′, E. 125° 46′			30.15*	765.8*	76	24.4	??	N			4		ks		NE	Swell	NE	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 29°, 54′ W. 145° 25′			30.09	764.3	74	23.3	72	S			1		3		S	Smooth		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 44° 38′, W. 57° 21′			30.08*	764.0*	55	12.8	??	E			4		3		ESE	Light	ESE	D. clouds	Captain Shackelford.
S. S. Indiana, N. 49° 14′, W. 30° 55′			29.88†	758.9†	50	10.0		WSW			3		2		WNW	Moderate.	NNE	Clear	Captain Sargent.
S. S. Ohio, Liverpool.			30.23	767.8	59	15.0	82	SE			2				Calm				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richar
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			?9.49	749.0	74	23.3	90	SW	9	4.0			10d		SW			Overcast	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 5, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.08	763.9	75.2	24.0	75	NE			2		1			0	0	Fair	Michel.
Algiers			30.02	762.6	67.6	19.8	72	NW			1		10			1.059	26.9	Covered	Peter.
La Calle			29.92	760.0	68.4	20.2	78	W			3		8			0.118	3.0	Very cloudy	Fleury.
Tunis			29.88	758.9	77.0	25.0	52	W			5		5			0	0	Cloudy	Jacques.
Sfax			29.97	761.1	78.8	26.0		S			3		7			0	0	Very cloudy	Husson.
Saida			30.02	762.6	64.2	17.9		WNW			1		2			0	0	Fair	Millot.
Tebessa			29.91	759.8				N			2		4			0	0	Cloudy	Bourgeois.
Geriville			29.98	761.5	62.1	16.7	46	NE			2		1			0	0	Fair	Lemaillot.
Laghouat			30.04	763.1	68.0	20.0	72	W			2		2			0	0	Fair	François.
Biskra			29.98	761.4	78.8	26.0	44	NW			1		6			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram																			
Cracow, I. R. Observatory	29.65	753.2	30.21	767.2	56.3	13.5	65	NE			2		6			0	0		Prof. Ivan Stozir
Eperies	29.65	753.2	30.44	773.2	48.2	9.0	66	NE			3		8			0.051	1.3		Dr. Wierzbiski.
Gratz	29.39	746.5	30.20	769.4	46.4	8.0	76	N			3		10ns		S	0.039	1.00		Julius Mikolik.
Hermannstadt	29.00	736.6	30.26	768.7	55.0	12.8	83	E			2		10			0.394	10.0		Andreas Rospini.
Kremsmünster	28.72	729.5	30.14	765.5	56.5	13.6	79	NW			1		9			0.163	4.15	Rainy	Prof. Reissenberger.
Lemberg	28.96	735.5	30.32	770.1	50.0	10.0	69	E			3		7			0	0		Prof. C. Wagner.
Pola	29.37	746.9	30.39	771.9	42.1	5.6	88	NE			1		10			0.020	0.5		Dr. T. Stanecki.
Szathmar	29.96	761.0	30.07	763.8	63.5	17.5	52	E			6		10s			0	0		I.R.Hydrographic Office
Szegedin																			Johann Tamas, S. J.
Trieste	29.90	759.4	30.18	766.5	58.5	14.7	77	NE			1		6			0	0		Karl Stancel.
Vienna	30.02	762.6	30.13	765.2	62.6	17 0	50	ENE			2		8			0	0		P. Busin.
	29.63	752.6	30.34	770.7	50.0	10.0	99	NW			2		10			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.86	733.0	30.40	772.2	48.0	8.9	69	NE			5		10			0	0		Royal Observatory.
Brussels	30.21	767.4	30.42	772.6	55.2	12.9	65	ENE			5		9		ENE	0	0		
Furnes	30.39	771.8	30.41	772.4	57.7	14.3	80	E			2		8			0	0		
Maeseyck	30.29	769.4	30.42	772.7	52.2	11.2	94	E			6		10			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.38	771.6	30.48	774.2	55.7	13.2		S	17	7.6			4			0	0	Hazy	W. Boswell.
Ardrossan	30.42	772.7	30.44	773.2	58	14.4		S			1		6					Foggy	William McNeil.
Armagh, Observatory			30.42	772.7	59.6	15.3		SSE	13	5.8			9					Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.47	773.9	57.3	14.1		SE	13	5.8			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.38	771.6	60.2	15.7		SSW			2		9					D. clouds	J. Dreyer.
Bradford, Yorkshire	30.12	765.0	30.52	775.2	52.4	11.3		NE			1		3			0	0	Blue sky	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	83.8	28.8		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.49	774.4	63.0	17.2		NE			1		1					D. clouds	H. Todd. [H.C.
Cardington			30.51	774.9	59.0	15.0		SE			1		4					D. clouds	John McLaren.
Chatham, School M. E.	30.34	770.6	30.47	773.9	61.2	16.2		NE			2		5					Fine	Lt. W. G. Morris, R. E.
Dartmoor	28.94	735.1	30.43	772.9	54.2	12.3		E			4		4					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.40	772.1	30.43	772.9	58	14.4		SSE			4		8					D. clouds	J. Mac Gowan.
Dover	30.43	772.9	30.46	773.7	57	13.9		ESE			4		4					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.49	774.4	59.2	15.1		SE	3.2	1.4			4					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.17	766.3	30.40	772.1	57.8	14.3		E			4		3					D. clouds	The Staff.
Fort Napier, (Natal)	27.94	709.7	30.14	765.5	76.0	24.4		NE			2		0					Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.99	761.7	84	28.9		SW			2		4					D. clouds	
Galway, Queen's College					57	13.9		NE			2		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.94	760.5	29.98	761.5	68.6	20.3		E			5		7					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	30.24	768.1	30.45	773.4	58.8	14.9		S			3		4					Blue sky	D. G. Maclean.
Great Yarmouth	30.42	774.4	30.49	774.4	57	13.9		ESE			3		0					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.29	769.4	30.47	773.9	60.7	15.9		E			1		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.15	765.8	30.37	771.4	60.5	15.8		NE			3		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.36	771.1	60	15.6		E			6		4			0	0	D. clouds	M. P. Moyle.
Holyhead	30.40	772.1	30.45	773.4	58	14.4		SSW			3		3					D. clouds	John Tilston.
Jersey	30.08	764.0	30.38	771.6	60.6	15.9		ENE			3		0					Blue sky	J. Fisher.
Kew, Observatory			30.46	773.7	60.0	15.6		E	14	6.3								Hazy	The Staff.
Kingstown	30.40	772.1	30.43	772.9	59	15.0		SSE			4		7					D. clouds	George Mitchell.
Leicester, Museum			30.50	774.7	57.7	14.3		Calm			0		3					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.81	757.2	29.89	759.2	71.4	21.9		NE			1		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.29*	744.0*	29.38*	746.2*	60	15.6		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			29.91	759.7	83.5	28.6		W			4		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.32	770.1	30.52	775.2	62.4	16.9		E			2		5k;ks		SE	0.008	0.20	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.95	760.7	30.48	774.2	59.1	15.1		ENE			2		5					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.48	774.2	59	15.0		E			1		7					D. clouds	F. Lucas
Plymouth	30.32	770.1	30.40	772.1	60.0	15.6		E			3		3					D. clouds	John Merrifield.
Roche's Point	30.32	770.1	30.36	771.1															W. Kennedy.
Saint Ann's Head	30.25	768.3	30.42	772.7	57	13.9		ESE			3		1					Hazy	John C. Walker.
Sandwick Manse, (Orkneys)			30.36	771.1	58.5	14.7		SSE	10	4.5			10					Misty	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.05	763.3	68.0	20.0		N			2		9			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	30.26	768.6	30.50	774.7	51.9	11.1		SE			1		4			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.44	773.2	30.47	773.9	60.4	15.8	61	Calm			0		2			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					55.8	13.2		SE			1		2					Hazy	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)			30.30	769.6	56	13.3		SSW			4		10					Gloomy	John Smith.
Stratfield Turgiss	30.24	768.1	30.46	773.7	58.9	14.9		E			1		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.32	770.1	63	17.2		S			2		8					Overcast	John Trotter.
Truro, Royal Institution			30.36	771.1	64	17.8		SE			6		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.31	769.9	60.2	15.7		SE	30	13.4			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					56	13.3		S			3		5			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.00	762.0	30.04	763.0	92.1	33.4	31	W	10	4.5		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.12	765.0	52.5	11.4	88	Calm			0		5k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.47	773.9	51.2	10.7		SW			2	5ck				0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.97	761.2	30.16	766.1	73.0	22.8	54	ESE	20.5	9.2			3	3	NW	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.14	765.5	30.23	767.8	54.9	12.7	87	SSE	2	0.9			0			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.33	770.4	56	13.3		SSW			4		10			0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			30.32	770.1	53	11.7		S			6		10					Foggy	Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Probably 30.29 in., 769.4 mm., and 30.38 in., 771.6 mm.

Marine Series. Vessels.	Barometer. Inches	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Clouds. Amount. Upper	Clouds. Amount. Lower	Clouds. Direction. Upper	Clouds. Direction. Lower	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria																		Capt. W. Watson.
S. S. Batavia, N. 43° 10′, W. 53° 25′			30.01	762.2	63	17.2		SSE		5		1			4	SSE	Blue sky	Capt. J. E. Mouland.
Ship Camperdown																		Capt. A. T. Miller.
Brig Catherine																		Capt. Adam Smith.
Barque Celeste																		Capt. D. F. McKechnie.
S. S. Hibernia																		Capt. W. R. Cato
Barque Maroon																		Capt. A. T. Brown.
Ship Mikado																		Capt. C. C. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 28′			30.29	769.4	50	10.0		NNW		4		6			6	NNW	D. clouds	Capt. H. Manning.
Barque Sorata																		Capt. Jas. J. Price.
Schooner Traveller, N. 45° 5′, W. 40° 25′			30.37	771.4	59	15.0		NNE		3		3			5	N	D. clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2			67.6	19.8	92	SE			2	1ck	2s			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.61	777.6	30.66	778.8	50.5	10.3	60	E			2		5						
Fanöe	30.64	778.3	30.66	778.8	51.4	10.8	62	E			4		3						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.48	748.9	29.53	750.0	47.1	8.4	77	SW			6		5					Raining	
Thorshavn, (Faröe)	30.11	764.8	30.15	765.7	54.1	12.3	83	SW			4		10						
Vestervig	30.47	774.0	30.64	778.3	51.4	10.8	81	ESE			2		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.82	757.5	30.37	771.5	57.2	14	28	NE			2		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	30.28	769.2	30.39	772.0	57.6	14.2	72	NE			2		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	29.99	761.8	30.07	763.8	64.8	18.2	47	N			6		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.71	754.6	30.28	769.1	59.2	15.1	52	NE			4		5kn		E	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.12	765.0	30.28	769.2	59.5	15.3	58	NE	13.2	5.9						0	0		Albert Cheux.
Beauvais	30.10	764.4	30.38	771.7	55.9	13.3	64	ENE			3		8			0	0	Very cloudy	Normal School.
Besançon	29.34	745.2	30.24	768.0	54.5	12.5	71	E			6		2		E	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.34	745.3	30.26	768.7	56.7	13.7	67	NW			2		5ck		NW	0	0	Cloudy	Normal School.
Bourges, Normal School	29.64	752.9	30.19	766.8	59.4	15.2	68	NE			4		2		NNE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	30.04	762.9	30.26	768.5	61.0	16.1	64	E			3		5k		E	0	0		The Staff.
Carcassonne, Normal School	29.58	751.4	29.99	761.8	62.6	17	90	W			2		1		W	0	0	Clear	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.72	754.8	30.28	769.1	61.9	16.6	64	NE			4		4		NE	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.02	762.4	30.34	770.5	60.8	16.0	58	E			3		5ck		E	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.89	733.8	30.24	768.2	59.7	15.4	61	*NE			1		5		N	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.44	747.8	30.34	770.5	54.0	12.2	68	E			4		2cn		E	0	0	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.95	735.2	30.09	764.2	69.8	21.0	34	E			2		5		SE	0	0	½ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.03	762.8	30.24	768.2	63.7	17.6	41	NE			4		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.03	762.7	30.32	770.2	58.8	14.9	56	NNE			2		2		NE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.26	743.1	30.18	766.5	57.0	13.9	62	NNE			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.24	768.1	30.34	770.6	61.9	16.6	47	E			2		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.48	748.7	30.25	768.4	57.9	14.4	67	NE			6		5		N	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.17	740.9	30.23	767.7	52.7	11.5	71	NNE			6		5		NE	0	0	Cloudy	Normal School.
Nismes, Normal School	29.87	758.6	30.07	763.7	66.2	19	74	NW			6		5		NW	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.87	758.7	30.25	768.4	57.2	14	58	E			6		5		E	0	0	Cloudy	Bernard, Director.
Paris, Observatory	30.11	764.7	30.35	770.8	56.8	13.8	62	NE			2		5k		E	0	0	Cloudy	National Observatory.
Privas	29.09	738.9	30.19	766.9	58.8	14.9	73	N			2		2		N	0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.20	767.0	30.23	767.8	65.1	18.4	49	ENE			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.28	769.2	30.37	771.4	61.9	16.6	55	N			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	29.10	739.2	30.17	766.2	66.2	19	54	NNE			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.41	747.1	30.13	765.2	59.5	15.3	85	N			3		5		NE	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.4	28										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.02	762.5	69.8	20.7	42	W			2		6			Inap.	Inap.	Cloudy	The Staff.
Mont-Louis	24.94	633.4	30.25	768.4	47.8	8.8	43	NNW	14.9	6.66			2		N	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.07	763.6	30.34	770.6	57.6	14.2	66	ENE			3-4		5		NE	0	0		Marié Davy, Director.
Perpignan			30.10	764.4	66.0	18.9	40	N	13.0	5.83			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.34	542.0			32.4	0.2		NE			1		2					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.57	573.3			37.4	3.0		NE			3		2			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.18	766.5	30.34	770.7	58.1	14.5	61	NE			2		2			0	0		E. Renou.
Toulouse, Observatory	29.46	748.2	30.19	766.7	62.4	16.9	52	NW			1		1		ENE	0	0		The Staff.
Tours	30.08	764.0	30.28	769.0	60.4	15.8	50	E			3		2		ENE	0	0		C. Marquet.
Versailles, (near Paris)			30.35	770.8	57.6	14.2	61	ESE			3		7			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.13	765.4	30.16	766.0	64.9	18.3	86	ENE	3.6	1.6			8k			0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.39	771.9	30.56	776.2	54.3	12.4	52	NE			1		3			0	0		Prof. Arndt.
Breslau	29.97	761.1	30.50	774.8	51.1	10.4	48	ENE			4		3			0	0		Royal University Obs'y.
Carlsruhe	29.92	760.0	30.36	771.1	51.8	11.0	75	NE			1		4			0	0		Albert Senz.
Cassel	29.94	760.4	30.56	776.1	54.0	12.2	50	ESE			8		1	NE		Inap.	Inap.		Dr. H. Möhl.
Crefeld	30.30	769.5	30.46	773.7	53.2	11.8	67	E			3		9			0	0		Director Lose.
Emden	30.62	777.8	30.66	778.7	53.3	13.5	83	NE			2		0			0	0		Prof. Prestel.
Frankfort on the Main	30.08	764.0	30.45	773.4	54.0	12.2	54	NNE			4		10			0	0		Physical Society.
Friedrichshafen	28.79	731.3	30.24	768.0	53.4	11.9	61	NE			7		9	NE		0	0		M. Wilhelm.
Hamburg	30.53	775.4	30.60	777.2	55.6	13.1	55	ENE			4		5k	ENE		0.012	0.3	Fine	Captain F. Hegemann.
Kiel	30.60	777.2	30.61	777.6	54.1	12.3	60	E			2		6			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.58	776.7	30.66	778.7	46.0	7.8	51	E										Clear	Prof. E. Luther.
Köslin			30.58	776.7	50.9	10.5		Calm			0		0			0	0		H. Müller.
Leipsic, Observatory	30.11	764.8	30.54	775.7	54.0	12.2	59	NE			4		4	NE		0.020	0 5		Prof. Bruhns.
Memel, Naval School	30.67	778.9	30.71	780.1	43.7	6.5	47	NE			3		0						Reinbrechtvon Skalweit.
Neufahrwasser	30.64	778.3	30.66	778.7	47.5	8.6	50	NE			2		0			0	0		A. Lothes.
Posen	30.29	769.4	30.58	776.7	49.6	9.8	65	E			3-4		1					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.78	756.4	30.34	770.6	53.2	11.8	69	NE			5		6	NE		0	0		Dr. Schur.
Stuttgart	29.37	746.0	30.33	770.4	50 9	10.5	76	NE			1		8	E		0	0		Prof. Schoder.
Treves, (Trier)	29.74	755.4	30.27	768.8	53.4	11.9	61	NE			5		10			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.83	732.2	30.35	771.0	52.2	11.2	45	E			2		10		ENE	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.62	777.7	30.66	778.7	51.6	10.9	87	E			3		7					Cloudy	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen. 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.65	753.1	30.03	762.7	77.2	25.1		SW										½ Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29 70	754.5	29.76	755.8	84.8	29.3	70	WSW	25.02	11.22			1			0	0		D. clouds
Deesa	29.35	745.5	29.83	757.7	76.9	24.9	90	E					10	SE		0.27	6.9		Drizzling
Bombay	29.77	756.2	29.81	757.1	79.3	26.3	91	S	30.0	13.4			10		SSW	2.20	55.9		Overcast
Poona	27.79	705.8	29.80	756.9	75.6	24.2	91	W					10		SW	0.42	10.7		Raining
Lahore	28.97	735.7	29.69	754.1	91.1	32.8	41	W	2.1	0.9			0			0	0		Blue sky
Belgaum	27.35	694.8	29.91	759.7	72.9	22.7	89	WNW	10.0	4.5			7			0.55	14.0		Overcast
Bangalore																			
Roorkee	28.90	732.9	29.81	757.2	69.8	21.0	82	SE	3.6	1.6			6			0.80	20.3		Hailing
Agra	29.18	741.1	29.73	755.2	90.8	32.7	45	NE					10	NE	NE	0	0		
Trichinopoly																			
Nagpur	28.78	731.0	29.82	757.3	81.9	27.7	70	NE	3.0	1.3			9			0	0		D. clouds
Madras																			
Lucknow	29.43	747.6	29.81	757.1	78.3	25.7	74	S	7.5	3.4			4	NE		0	0		D. clouds
Allahabad	29.51	749.6	29.82	757.5	80.2	26.8	72	E	3.3	1.5			5	SW		0	0		D. clouds
Patna	29.70	754.3	29.88	759.0	73.5	23.1	88	SE	1.9	0.8			10	SE	E	0.52	13.2		Drizzling
Hazaribagh	27.85	707.4	29.88	758.8	75.0	23.9	84	Calm	9.7	4.3			10			0.03	0.8		Showery
Cuttack	29.78	756.3	29.86	758.4	82.9	28 3	70	SSE	3.2	1.4						0	0		Blue sky
Calcutta (Alipore)	29.85	758.2	29.87	758.7	81.9	27.7	83	W	0.5	0.2			1			0	0		Blue sky
Goalpara	29.47	748.4	29.85	758.3	82.6	28.1	69	Calm	1.0	0.4			0			0	0		Blue sky
Chittagong	29.81	757.2	29.90	759.6	80.4	26.9	95	SSW	2.7	1.2			0			0	0		Blue sky
Sibsagar	29.55	750.5	29.88	759.0	78.9	26.1	76	ENE	1.1	0.5			2			0	0		Blue sky
Rangoon																			
Jubbulpore	28.45	722.6	29.80	757.0	83.0	28.3	61	S	4.6	2.1			9	S	SW	0	0		Overcast

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.28	566.0	30.15	765.8	32.9	0.5	100	E			2		9	NE		0	0		Ab. Dom. Mongini.
Stelvio	22.26	565.4	30.15	765.7	35.6	2.0		ESE			1		6	W		0	0		Signora Ernesta Manfredi.
Udine	29.71	754.7	30.12	765.1	63.1	17.3	48	E	3.1	1.4			9			0	0		Prof. Giovanni Clodig.
Padua	29.99	761.8	30.10	764.6	63.7	17.6	52	NE	12.5	5.6			9			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.92	760.0	30.11	764.9	64.2	17.9	49	S	4.9	2.2			7	W		0	0		Conte Alm. Da Schio.
Verona	29.87	758.7	30.09	764.3	65.1	18.4	54	SE	6.9	3.1			10			0	0		Dott. B. Bertoncelli.
Bergamo	28.79	731.3	30.10	764.6	63.3	17.4	61	S			2		8			0	0		Prof. Trionfini Carlo.
Domodossola	29.08	738.6	30.11	764.7	60.4	15.8	63	S			4		8			0	0		Prof. Giuseppe Calza.
Milan	29.61	752.1	30.13	765.3	66.4	19.1	60	S			1		4			0.067	1.7		Ab. Gio. Capelli.
Pavia	29.77	756.1	30.11	764.9	63.0	17.2	48	NE			4		3	NE		0	0		Prof. Gio. Cantoni.
Moncalieri	29.24	742.6	30.15	765.7	60.8	16.0	83	SSW	0	0			9	SE		0.039	1.0		Prof. P. F. Denza.
Mondovi	28.22	716.7	30.13	765.4	55.9	13.3	70	NW			2		10			0.067	1.7		Prof. D. C. Bruno.
Porto Maurizio	29.82	757.4	30.04	763.0	65.5	20.3	34	ENE			6		7	NE		0	0		Prof. L. Vassallo.
Genoa	29.87	758.7	30.04	763.0	69.3	20.7	42	N	9.4	4.2			6	NE		0	0		Prof. G. M. Garibaldi
Piacenza	29.85	758.3	30.11	764.8	64.6	18.1	41	NE	8.7	3.9			8	S		0	0		Dott. G Manzi.
Parma	29.80	756.8	30.11	764.9	62.6	17.0	63	ESE			4		10			0.134	3.4		Prof. P. Pigorini.
Florence	29.79	756.7	30.05	763.2	63.9	17.7	56	NE			6		10	ENE		0	0		Cav. F Meucci.
Leghorn	29.03	760 2	30.01	762.3	64.2	17.9	57	ENE	11.9	5.3			10			0.079	2.0		Prof. P. Monte.
Siena	28.80	731.5	30.00	762.1	58.1	14.5	67	ENE	13.0	5.8			10	NE		0.102	2.6		Prof. L. Toscani.
Urbino	28.51	724.2	30.08	763.9	55.4	13.0	55	NE			2		10			0.236	6.0		Prof. P. Serpieri.
Pesaro	30.01	762.2	30.06	763.4	64.6	18.1	68	NE	29.3	13.1			10	NE		0	0		Prof. Luigi Guidi.
Ancona	29.94	760.4	30.04	763.1	63.3	17.4	60	NE			4		10	NE		0.035	0.9		Prof. F. DeBosis.
Grosseto	29.90	759.4	30.01	762.2	62.2	16.8	68	NNE			6		8	SE		0.098	2.5		Avv. P. Ponticelli.
Rome	29.75	755.6	29.92	760.0	68.4	20.2	56	E	7.4	3.3			10			0.024	0.6		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.74	755.5	29.94	760.5	75.9	24.4	59	SE			4		5	SSW		0.807	20.5		Prof. L. Palmieri.
Lecce	29.65	753.0	29.89	759.3	71.2	21.8	67	SE	6.3	2.8			8			0.004	0.1		Prof. C. De Giorgi.
Cosenza	29.13	739.8	30.00?	762.0?	69.8	21.0	68	SE			1		8			0	0		Prof. F. D. Conti.
Cagliari	29.56	750.8	29.75	755.6	64.4	18.0	76	N			2		9	N		1.024	26.0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.80	756.9	29.85	758.1	71.6	22.0	72	S			2		10			0	0		Prof. F. Cafiero.
Palermo	29.60	751.9	29.85	758.2	66.6	19.2	63	WSW	1.8	0.8			10			0.087	2.2		Prof. G. Cacciatore.
Caltanissetta	28.02	711.6	29.93	760.2	59.2	15.1	89	E			4		10			0.618	15.7		Prof. A. Pagani.
Syracuse	29.84	758.0	29.92	760.0	69.1	20.6	71	SW			1		10	WSW		0.177	4.5		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.41	747.1	29.97	761.2	68.5	20.3	70	WNW	1.8	0.8			10			0.736	18.7		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 559 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.76	755.9	29.86	758.5	59.2	15.1	86	W	1.2	0.5						0	0	Misty	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.18	588.8	30.25	768.3	54.5	12.5	76	W	0.8	0.34		0	6ks		NW	0	0	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.47	773.8	30.47	773.8	57.2	14.0		ENE			4					0.016	0.4		
Groningen	30.50	774.7	30.56	776.1	53.1	11.7		ENE			2					0	0		
Helder	30.52	775.2	30.52	775.2	54.0	12.2		ENE			4					0	0		
Hellevoetsluis			30.46	773.7	57.6	14.2	63	ENE			6								
Utrecht	30.46	773.6	30.50	774.8	56.1	13.4	52	E			5		2			0	0	Light cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.52	775.2	30.58	776.6	52.5	11.4	71	S	16.1	7.2			4			0	0		
Bróno	30.38	771.7	30.42	772.7	51.8	11.0	52	SSE	9	4			10			0	0		
Christiania	30.53	775.4	30.68	779.3	43.0	6.1	84	W	0	0			10			0	0	Light fog	
Tromsö	30.17	766.3	30.21	767.4	46.8	8.2	67	SW	13	6			10			0.079	2.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer: Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Angra, (Azores)	29.56	750.8	29.75	755.7	57.6	14.2	84	N	8.0	3.6			7			0.394	10.0		Dr. J. A. Sampaio
Campo Major	29.05	737.9	30.06	763.4	71.6	22.0	41	ESE	10.5	4.7			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.87	758.8	29.95	760.6	73.9	23.3	82	WSW	4.3	1.9			9			0.130	3.3	Raining	Capt. D. A. de Cunha.
Lisbon, Observatory	28.69	754.0	30.04	762.9	70.9	21.6	56	ENE	4.9	2.2			2	WSW		0	0		The Staff.
Ponta Delgada, (Azores)	29.67	753.5	29.74	755.3	57.6	14.2	82	NE					10			0.500	12.7	Thunder-storm	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

NAVAL SERIES. VESSELS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer: Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0–9	Direction from—	Weather.	Observer.
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer: Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Warsaw	30.10	764.6	30.54	775.7	46.9	8.4	38	ENE	11	5			1						Astronomical Obs.
Wilna	30.24	768.2	30.69	779.4	42.1	5.6	60	E	7	3			2						Astronomical Obs.
Dorpat	30.55	776.0	30.80	782.4	42.3	5.7	50	NNW	2	1			0						Physical Cabinet.
St. Petersburg	30.75	781.1	30.77	781.5	42.3	5.7	52	WNW	9	4			2						Central Physical Obs.
Kuopio	30.34	770.5	30.67	779.0	45.3	7.4	83	WSW	7	3			5					Raining	Ch. Forsten.
Kieff	29.76	755.8	30.42	772.6	42.1	5.6	64	NNE	7	3			8						Physical Cabinet.
Nikolaiev	30.22	767.5	30.29	769.3	47.8	8.8	81	NE	13	6			10						Kurdakof.
Kertch	30.10	764.6	30.12	765.1	57.9	14.4	96	N	4	2			10					Foggy	Lagorio.
Moscow	30.00	762.1	30.58	776.6	38.8	3.8	52	N	11	5			8						Meteorological Obs.
Lugan	29.87	758.7	30.08	764.0	45.9	7.7	75	NNE	31	14			10						Meteorological Obs.
Archangel	30.61	777.4	30.63	777.9	35.2	1.8	75	Calm	0	0			10						Ogorodnikof.
Tiflis	28.55	725.2	29.89	759.3	81.3	27.4	32	NW	4	2			5						Physical Observatory.
Astrakhan	29.92	759.9	29.84	757.8	74.8	23.8	51	W	18	8			9			Blank	Blank		Sebastianof.
Kasan	29.95	760.7	30.23	767.9	34.9	1.6	66	N	7	3			10						Physical Cabinet.
Orenburg	29.96	761.0	30.34	770.6	49.6	9.8		E	13	6			0						Tschernischef.
Ekaterinburg	29.22	742.2	30.22	767.5	28.9	— 1.7	96	E	4	2			10					Snowing	Meteorological Obs.
Nukuss	29.82	757.4	30.05	763.2	67.6	19.8	46	WSW	0	0			1						
Kasaly																			Bobrof.
Tashkend	28.57	725.6	30.26	768.6	61.9	16.6	77	Calm	0	0			0						Michelson.
Barnaul	29.91	759.7	30.45	773.4	39.7	4.3	37	Calm	0	0			4						Meteorological Obs.
Yeniseisk	30.15	765.7	30.29	769.4	36.3	2.4	89	SW	2	1			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.04	762.9	30.18	766.5	55.6	13.1	61	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					31.6	— 0.2	90	Calm	0	0									

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer: Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Navveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.91	708.8	30.12	765.0	61.9	16.6	56	N	2.2	1.00		1	0	NE		0	0	Almost clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.90	759.5	29.98	761.6	78.1	25.6	87	W	1.8	0.8		0	8kn			0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.93	760.1	30.02	762.6	76.1	24.5	44	ESE	21.3	9.52		0	1		SE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.90	759.5	83.5	28.6	77	SE	0	0		2cs	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.38?	745.5?	29.39?	746.5?	40.6	4.8	.....	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	*30.56	776.1	30.61	777.4	46.4	8.0	78	SW	.....	.....	4	.....	6	.....	.....	0	0	.....	
Hernosand	30.56	776.8	30.61	777.6	48.2	9.0	56	SSW	.....	.....	4	.....	4	.....	.....	0	0	.....	
Stockholm	30.55	775.9	30.72	780.4	46.4	8.0	75	SSW	.....	.....	2	.....	4	.....	.....	0	0	.....	
Wisby	30.62	777.8	30.68	779.3	48.9	9.4	56	SE	.....	.....	4	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.66	778.7	30.73	780.6	47.1	8.4	61	SSW	11.2	5.0	.....	.....	7	NE	SW	0.005	0.12	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.77	730.7	30.20	767.0	53.1	11.7	71	NE	.....	.....	1	.....	9	.....	.....	0	0	Covered	The Observatory.
Zurich	28.61	726.8	30.27	768.9	48.6	9.2	87	NE	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +4.3 mm; Thermometer, —3.1 cent.; Relative Humidity, +2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.11	764.8	66.9	19.4	75	NE	17	7.5	.....	.....	10	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.10	764.6	73.8	23.2	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	B. Stefanides.
Valona	.....	.....	30.08	764.0	74.8	23.8	.....	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.97	761.2	84.9	29.4	61	N	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second:) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.59	751.6	29.66	753.4	51.7	10.9	94	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.95	760.7	41	5.0	.....	NW	4	1.8	.....	0	2s	.....	NW	0.95	24.1	Fair	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.66	753.4	52	11.1	96	N	6	2.7	.....	.....	10n	.....	N	0.61	15.5	Heavy rain	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.64	752.8	62	16.7	90	SE	13	5.8	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.69	754.1	29.89	759.2	40.7	4.8	85	NW	.....	.....	1	0	1s	.....	.....	0.307	7.80	Fair	James Smith, M. A.
Dalhousie, N. B.	29.68	753.9	29.72	754.9	45.5	7.5	90	W	.....	.....	2	.....	.....	.....	.....	0.72	18.3	Raining	H. A. Johnson.
Esquimault, B. C.	29.91	759.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.61	15.5	.....	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.74	755.4	42	5.6	79	W	10	4.5	.....	5k	2n	S	S	0.65	16.5	Cloudy	J. McWilliams.
Fredericton, N. B.	29.56	750.8	29.63	752.6	83.8	28.8	89	NW	6	2.7	.....	.....	10n	.....	.....	0.59	15.0	Raining	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.88	758.9	32	0.0	96	W	14	6.3	.....	5k	5ks	W	W	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.24	742.7	30.05	763.3	44.2	6.8	96	NW	.....	.....	3	4k	6n	W	.....	†0.446	†11.33	Raining	H. J. Strang, M. A
Granton, Ontario	28.93	734.8	30.05	763.3	40	4.4	91	NW	.....	.....	2	.....	10n	.....	E	0.48	12.2	Cloudy	James Grant.
*Halifax, N. S.	29.47	748.5	29.60	751.8	60	15.6	99	SE	12	5.4	.....	.....	10n	.....	.....	0.047	1.19	Heavy rain	F. Allison, M. A.
Hamilton, Ontario	29.69	754.1	30.07	763.8	41.9	5.5	83	W	.....	.....	3	0	0	.....	.....	0.01	0.3	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.01	762.2	30.03	762.7	58	14.4	88	S	.....	.....	3	3k	4s	S	.....	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.62	752.3	30.00	762.0	59	3.9	88	NE	12	5.4	.....	0	0	.....	.....	1.60	40.6	Clear	S. Woods, M. A
*Montreal, Quebec	29.66	753.4	29.86	758.4	44	6.7	77	NW	8	3.6	.....	0	0	.....	.....	0.48	12.2	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.28	743.7	30.00	762.0	33	0.6	94	E	3	1.3	.....	2cs	0	W	.....	0.19	4.8	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.27	743.4	30.04	763 0	36.5	2.5	90	Calm	.....	.....	0	0	0	.....	.....	0.29	7.4	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.33	745.0	30.04	763.0	38	3.3	91	NW	5	2.2	.....	2k	0	NW	.....	0.06	1.5	Fair	H. Morgan.
Port Hastings, N. S.	29.65	753.1	29.70	754.4	54 6	12.6	.....	SE	10	4.5	.....	.....	.....	.....	.....	Inap.	Inap.	Foggy	Peter Grant.
Port Stanley, Ontario	29.40	746.7	30.06	763.5	40	4.4	87	W	6	2.7	.....	8k	0	NW	.....	0.07	1.8	Cloudy	M. Payne.
*Quebec, Quebec	29.46	748.3	29.78	756.4	43	6.1	67	NW	10	4.5	.....	8c	5n	.....	NW	0.10	2.5	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.60	749.3	29.97	761.2	36	2.2	95	NW	6	2.7	.....	0	2s	.....	NW	0.57	14.5	Fair	W. H. McIntyre.
St. John, N. B.	29.44	747.8	29.60	751.8	60	15.6	94	SE	3	1.3	.....	.....	9ks	.....	.....	0.27	6.9	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.27	743.4	29.97	761.2	44	6.7	84	NW	10	4.5	.....	.....	10n	.....	NW	0.02	0.5	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	29.99	761.7	40	4.4	91	SE	3	1 3	.....	5k	0	NW	.....	0.47	11.9	Cloudy	R. J. Cole.
Stratford, Ontario	28.71	729.2	30.02	762.5	38.4	3.6	93	Calm	0	0	.....	2cs	3s	NW	.....	0.675	17.15	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.76	755.9	29.78	756.4	60	15.6	96	SE	10	4.5	.....	.....	10n	.....	.....	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.03	762.7	41	5.0	82	NW	5	2.2	.....	0	0	.....	.....	0.09	2.3	Clear	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	52.0	11.1	100	SE	.....	.....	.....	.....	10n	.....	.....	Inap.	Inap.	Hazy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4: for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford. 1,182 ft. or 360.3 m.

†Rain-fall in 48 hours.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.51	749.5	29.73	755.1	50	10.0	78	NW	14	6.3		0	5ks		NW	2.06	52.3	Fair	
Alpena, Michigan	29.33	745.0	29.99	761.7	39	3.9	81	SW	4	1.8		0	8ks		SW	0.04	1.0	Fair	
Atlantic City, New Jersey	29.68	753.9	29.70	754.4	54	12.2	61	NW	20	8.9		0	0			0.32	8.1	Clear	
Augusta, Georgia	29.78	756.4	29.97	761.2	57	13.9	69	NW	4	1.8		0	0			0	0	Clear.	
Baltimore, Maryland	29.80	756.9	29.84	757.9	52	11.1	47	NW	18	8.0		0	0			2.68	68.1	Clear	
Barnegat, New Jersey	29.65	753.1	29.67	753.6	56	13.3	62	NW	31	13.9		0	0			2.13	54.1	Clear	
Bismarck, Dakota	28.34	719.8	30.10	764.5	28	— 2.2	78	W	11	4.9		0	0			0	0	Clear	
Boise City, Idaho	27.23	691.6	29.84	757.9	48	8.9	100	Calm	0	0			Fog		Calm	0.47	11.9	Foggy	
Boston, Massachusetts	29.31	744.5	29.46	748.3	52	11.1	100	NW	28	12.5			10n		NW	4.00	101.6	Light rain	
Brackettville, Texas	28.89	733.8	29.90	759.4	66	18.9	41	Calm	0	0		8k	0	Calm		0	0	Fair	
Breckenridge, Minnesota	29.11	739.4	30.17	766.3	20	— 6.7	85	W	9	4.0		0	0			0	0	Clear	
Brownsville, Texas	29.96	761.0	30.03	762.7	67	19.4	73	N	3	1.3		0	0			0	0	Clear	
Buffalo, New York	29.28	743.7	30.00	762.0	41	5.0	91	NW	6	2.7		1k	5s	Calm	NW	0.56	14.2	Fair	
Burlington, Vermont	29.58	751.3	29.84	757.9	44	6.7	76	N	16	7.2			10s		N	1.47	37.3	Cloudy	
Cairo, Illinois	29.85	758.2	30.26	768.6	45	7.2	76	N	8	3.6		0	0			0	0	Clear.	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.77	680.0	30.26	768.6	50	10.0	51	Calm				0	0			0	0	Clear.	
Campo, California	27.35	694.7	29.92	760.0	40	4.4	91	E	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.72	754.9	29.73	755.1	60	15.6	59	N	22	9.8		2k	0	N		1.31	33.3	Fair	
Cape Henry, Virginia	29.78	756.4	29.80	756.9	60	15.6	59	NW	35	15.6		0	0			1.88	47.8	Clear	
Cape Lookout, N. Carolina	29.75	755.6	29.76	755.9	60	15.6	55	N	28	12.5		0	0			1.54	39.1	Clear.	
Cape May, New Jersey	29.70	754.4	29.73	755.1	58	14.4	57	NW	52	23.2		0	0			1.52	38.6	Clear.	
Charleston, South Carolina	29.88	758.9	29.95	760.7	61	16.1	55	N	12	5.4		5ck	0	NW		0.01	0.3	Fair	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	33	0.6	61	N	4	1.8			10s		Calm	0	0	Cloudy	
Chicago, Illinois	29.42	747.3	30.13	765.3	40	4.4	73	W	5	2.2		5k	0	W		0	0	Fair	
Cincinnati, Ohio	29.42	747.3	30.08	764.0	45	7.2	68	NW	6	2.7		1cs	Fog	Calm	NW	0	0	Fair	
Cleveland, Ohio	29.35	745.5	30.08	764.0	50	10.0	51	W	14	6.3		8k	0	W		0.02	0.5	Fair	
Concho, Texas	28.15	715.0	29.90	759.4	49	9.4	56	NE	10	4.5		0	0			0	0	Clear.	
Corsicana, Texas	29.66	753.4	30.14	765.5	52	11.1	72	N	2	0.9		2cs	2s	W	Calm	0	0	Fair	
Davenport, Iowa	29.53	750.0	30.18	766.6	45	7.2	68	SW	5	2.2			10s		Calm	0	0	Cloudy	
Denison, Texas	29.37	746.0	30.19	766.8	49	9.4	71	NE	4	1.8		1k	0	NE		0	0	Clear	
Denver, Colorado	24.86	631.4	30.08	764.0	35	1.7	45	NW	7	3.1			10s		Calm	0	0	Cloudy	
Detroit, Michigan	29.38	746.2	30.06	763.5	39	3.9	91	W	5	2.2		0	1ks		Calm	0	0	Clear.	
Dodge City, Kansas	27.48	698 0	29.84	757.9	36	2.2	80	SE	6	2.7		2c	0	W		0	0	Clear.	
Dubuque, Iowa	29.43	747.5	30.15	765.8	41	5.0	83	NW	2	0.9			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.30	744.2	30.00	762.0	34	1.1	79	NW	6	2.7		0	0			0	0	Clear	
Eagle Pass, Texas	29.27	743.4	30.00	762.0	62	16.7	50	Calm	0	0		2k	5s	NW	Calm	0	0	Cloudy	
Eastport, Maine	29.45	748.0	29.52	749.8	59	15.0	100	S	9	4.0			Fog			0.04	1.0	Foggy	
Erie, Pennsylvania	29.29	744.0	30.00	762.0	48	8.9	62	NW	16	7.2		5k	2s	NW		0.02	0.5	Cloudy	
Escanaba, Michigan	29.35	745.5	30.02	762.5	33	0.6	80	W	8	3.6		0	8s		W	Inap.	Inap.	Cloudy	
Florence, Arizona	28.31	719.1	29.91	759.7	70	21.1	48	W				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.07	611.4	30.07	763.8	49	9.4	50	N	12	5.4		0	0			0	0	Clear	
Fort Craig, New Mexico	25.52	648.2			50	10.0	65	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.62	752.3	30.17	766.3	45	7.2	60	E	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.84	732.5	30.14	765.5	45	7.2	68	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.89	733.8	30.03	762.7	46	7.8	69	Calm	0	0		0	5s		W	0	0	Fair	
Fort Sully, Dakota	28.55	725.2	30.33	770.4	21	— 6.1	85	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	30.03	762.7	30.07	763.8	64	17.8	78	NE	10	4.5			10s		N	0	0	Cloudy	
Grand Haven, Michigan	29.42	747.3	30.07	763.8	50	10.0	58	W	13	5.8		0	5s		NW	0	0	Fair	
Indianapolis, Indiana	29.38	746.2	30.18	766.6	42	5.6	65	NW	3	1.3		0	0			0	0	Clear.	
Indianola, Texas	30.03	762.7	30.05	763.3	67	19.4	68	N	16	7.2			10ks		SE	0	0	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	29.91	759.7	29.93	760.2	64	17.8	67	NW	4	1.8		0	0			0	0	Clear	
Keokuk, Iowa	29.54	750.3	30.17	766.3	50	10.0	71	W	4	1.8		0	5s		Calm	0	0	Fair	
Key West, Florida	29.89	759.2	29.93	760.2	80.5	26.9	78	NW	10	4.5		1c	8ks	Calm	NW	0	0	Cloudy	
Kittyhawk, North Carolina	29.78	756.4	29.80	756.9	58	14.4	63	N	38	17.0		0	0			0.91	23.1	Clear	
Knoxville, Tennessee	29.08	738.6	30.10	764.5	46	7.8	85	N	6	2.7		0	Sm'e			Inap	Inap.	Smoky	
La Crosse, Wisconsin	29.37	746.0	30.12	765.0	42	5.6	74	W	6	2.7		5k	0	W		0	0	Fair	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	50	10.0	65	Calm	0	0		5c	0	Calm		0	0	Fair	
Laredo, Texas					64	17.8	52	Calm	0	0		10k	0	Calm		0	0	Cloudy	
Leavenworth, Kansas	29.34	745.2	30.21	767.3	43	6.1	91	Calm	0	0		8ck	Fog	W		0	0	Cloudy	
Los Angeles, California	29.55	750.6	29.88	758.9	61	16.1	88	N	4	1.8			Fog			0	0	Foggy	
Louisville, Kentucky	29.61	752.1	30.18	766.6	43	6.1	74	N	8	3.6		0	0			0	0	Clear	
Lynchburg, Virginia	29.24	742.7	29.91	759.7	58	14.4	53	NW	2	0.9		0	0			2.63	66.8	Clear	
Maricopa Wells, Arizona					58	14.4	53	N				0	0			0	0	Clear	
Marquette, Michigan	29.21	741.9	29.92	760.0	37	2.8	54	SW	14	6.3			10s		SW	0	0	Cloudy	
Mason, Texas	28.42	721.9	30.17	766.3	56	13.3	47	Calm	0	0		2ck	2s	W		0	0	Fair	
Memphis, Tennessee	29.89	759.2	30.22	767.6	46	7.8	77	NE	4	1.8		0	0			0	0	Clear.	
Milwaukee, Wisconsin	29.45	748.0	30.16	766.1	37	2.8	80	SW	6	2.7		5ck	Haze	SW		0	0	Fair	
Mobile, Alabama	30.04	763.0	30.09	764.3	53.5	11.9	70	N	8	3.6		0	0			0	0	Clear.	
Montgomery, Alabama	29.83	757.7	30.07	763.8	52	11 1	65	NW	6	2.7		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	28.96	735.6	30.02	762.5	50	10.0	71	Calm	0	0		0	Haze			0.12	3.0	Clear.	
Mt. Washington, N. H.	23.46	595.9	29.82	757.4	30	— 1.1	89	NW	42	18.8		8k	5s	N	NW	1.00	25.4	Fair	
Nashville, Tennessee	29.65	753.1	30.19	766.8	50	10.0	58	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	29.48	748.8	29.60	751.8	56	13.3	62	N	32	14.3		5c	0	N		4.04	102.6	Fair	
New London, Connecticut	29.42	747.3	29.47	748.5	58	14.4	64	NW	24	10.7		0	0			2.99	75.9	Clear	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	62.5	16.9	48	NE	12	5.4		1c	0	W		0	0	Clear	
Newport, Rhode Island	29.38	746.2	29.43	747.5	56	13.3	87	NW	25	11.2			10ks		NW	2.03	51.6	Threatening	
New York, New York	29.51	749.5	29.68	753.9	56	13.3	50	W	21	9.4		Haze	0	Calm		4.32	109.7	Clear	
Norfolk, Virginia	29.80	756.9	29.85	758.2	55	12.8	55	N	27	12.1		0	0			1.23	31.2	Clear	
North Platte, Nebraska	27.21	691.1	29.86	758.4	35	1.7	61	NE	14	6.3			10s		NE	0	0	Cloudy	
Olympia, Washington Ter.	29.90	759.4	29.94	760.5	52	11.1	93	S	3	1.3			10n		Calm	1.23	31.2	Light rain	
Omaha, Nebraska	29.04	737.6	30.15	765.8	43	6.1	75	S	3	1.3		8cs	0	NW		0	0	Cloudy	
Oswego, New York	29.62	752.3	29.94	760.5	47	8.3	66	N	14	6.3		5k	0	N		0.49	12.4	Fair	
Pembina, Dakota	29.10	739.1	29.96	761.0	30	— 1.1	78	W	9	4.0		10k	0	W		0	0	Cloudy	
Philadelphia, Pennsylvania	29.71	754.6	29.76	755.9	52	11.1	59	N	24	10.7		0	1s		NW	2.74	69.6	Clear	
Phœnix, Arizona					57	13.9	47	Calm				0	0			0	0	Clear.	
Pike's Peak, Colorado	17.80	452.1	30.01	762.2	19	— 7.2	85	W	12	5.4			10s		SW	0	0	Cloudy	
Pioche, Nevada	24.07	611.4	29.84	757.9	44	6.7	23	W	1	0.4		0	0			0	0	Clear.	
Pittsburg, Pennsylvania	29.20	741.7	30.01	762.2	46	7.8	85	NW	7	3.1		2k	0	NW		0.16	4.1	Fair	
Port Huron, Michigan	29.37	746.0	30.05	763.3	38	3.3	80	W	5	2.2		0	0			0	0	Clear	
Portland, Maine	29.42	747 3	29.47	748.5	54	12.2	93	N	28	12.5			10n		N	1.41	35.8	Light rain	
Portland, Oregon	30.00	762.0	30.10	764.5	53	11.7	93	Calm	0	0			10s		Calm	0.52	13.2	Cloudy	
Prescott, Arizona	24.76	628.9	30.12	765.0	44	6.7	36	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.92	760.0	29.93	760.2	77	25.0	76	N	20	8.9		0	0			Inap.	Inap.	Clear	
Red Bluff, California	29.63	752.6	29.98	761.5	60	15.6	60	N	3	1.3		0	0			0	0	Clear	
Rochester, New York	29.33	745.0	29.95	760.7	46	7.8	69	NW	6	2.7		5k	0	NW		0.20	5.1	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.57	751.1	30.14	765.5	55	12.8	90	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
Sacramento, California	29.89	759.2	29.97	761.2	57	13.9	84	Calm	0	0		0	0			0	0	Clear	
St. Louis, Missouri	29.67	753.6	30.26	768.6	45	7.2	76	N	2	0.9		1ck	Fog	Calm	Calm	0	0	Foggy	
St. Marks, Florida	29.98	761.5	29.99	761.7	56	13.3	74	NW	4	1.8		0	0			0	0	Clear	
St. Paul, Minnesota	29.25	742.9	30.10	764.5	35	1.7	69	W	2	0.9		0	0			0	0	Clear.	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.65	651.5	29.98	761.5	53	11.7	53	Calm	0	0			10s		Calm	0	0	Cloudy	
San Antonio, Texas	29.34	745.2	29.92	760.0	63	17.2	57	NE	6	2.7		2c	5ks	Calm	E	0	0	Cloudy	
San Diego, California	29.86	758.4	29.92	760.0	63	17.2	83	N	5	2.2			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.42	747.3	30.11	764.8	44	6.7	84	NW	14	6.3		8k	0	NW		Inap.	Inap.	Fair	
Sandy Hook, New Jersey	29.62	752.3	29.64	752.8	57	13.9	63	N	44	19.7		0	0			3.55	90.2	Clear	
San Francisco, California	29.94	760.5	30.01	762.2	55	12.8	93	E	2	0.9		0	Fog		Calm	0	0	Clear	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	43	6.1	58	SE	4	1.8		0	Haze			0	0	Hazy	
Savannah, Georgia	29.86	758.4	29.95	760.7	63	17.2	61	NE	8	3.6		0	0			0	0	Clear	
Shreveport, Louisiana	29.94	760.5	30.17	766.3	52	11.1	70	NE	3	1.3		0	0			0	0	Clear	
Smithville, North Carolina	29.87	758.7	29.90	759.4	58	14.4	63	N	4	1.8		0	0			0.03	0.8	Clear	
Springfield, Massachusetts	29.44	747.8	29.56	750.8	54	12.2	61	N	16	7.2		0	0			3.77	95.8	Clear	
Stanwix, Arizona																			
Stockton, Texas					58	14.4	70	S	16	7.2		0	0			0	0	Clear.	
Thatcher's Island, Mass	29.38	746.2	29.43	747.5	54	12.2	100	NE	40	17.9			10n		NE	3.17	80.5	Heavy rain	
Toledo, Ohio	29.42	747.3	30.11	764.8	43	6.1	66	Calm	0	0		0	0			0	0	Clear.	
Tucson, Arizona	27.43	696.7	29.98	761.5	65	18.3	68	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	29.91	759.7	29.94	760.5	64	17.8	48	N	20	8.9		0	0			0	0	Clear	
Umatilla, Oregon	29.78	756.4			46	7.8	92	Calm	0	0			10n		Calm	0.40	10.2	Cloudy	
Vicksburg, Mississippi	29.90	759.4	30.16	766.1	59	10.0	78	NE	1	0.4		2ck	0	NE		0	0	Clear	
Virginia City, Montana	24.25	615.9	29.93	760.2	31	— 0.6	100	Calm	0	0			10n		Calm	0.18	4.6	Light snow	
Visalia, California	29.61	752.1	29.98	761.5	51	10.6	59	SE	1	0.4		0	0			0	0	Clear	
Washington, D. C.	29.76	755.9	29.87	758.7	52	11.1	53	NW	20	8.9		0	0			3.75	95.3	Clear	
Wickenburg, Arizona					49	9.4	14	NW				0	0			0	0	Clear	
Wilmington, N. Carolina	29.82	757.4	29.90	759.4	57	13.9	69	N	16	4.5		0	0			0.07	1.8	Clear	
Winnemucca, Nevada	25.69	652.5	30.65	763.3	47	8.3	62	E	6	2.7		10k	0	W		0	0	Cloudy	
Wood's Holl, Mass	29.27	743.4	29.32	744.7	60	15.6	88	N	30	13.4			10n	N		1.55	39.4	Light rain	
Yankton, Dakota	28.91	734.3	30.27	768.8	30	— 1.1	83	NW	3	1.3		1cs	0	NW		0	0	Clear.	
Yuma, Arizona	29.71	754.6	29.87	758.7	58	14.4	26	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.43	747.5	29.48	748.8	25.5	— 3.6	94	NW	15	6.7		2k	4s	NW	NW			Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.92	760.0	29.94	760.5	80	26.7	82	Calm	0	0		4c	8ks;n	Calm		0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.12	765.0	30.13	765.3	81	27.2	82	Calm	0	0		2c	2s	NE		0	0		James Gall.
Santiago de Cuba, W. I.	29.97	761.2	29.98	761.5	82	27.8	79	Calm	0	0		0	1ks		Calm	0	0	Clear	T. W. Beattie.
Navassa, W. I.	29.89	759.2	29.97	761.2	83.5	28.6		S			1					0.05	1.3	Cloudy	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	Calm				2ck	2ks	E		0	0	Clear.	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.83	757.7	29.85	758.2	83	28.3	83	SE				2k	5ks		S				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.02	762.5	83	28.3	79	E			1	5k	6ks	E		0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			67.0	19.4	83	Calm			0	6cs	3ks			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,848.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.02	762.5	60	15.6	57	13.9	87	SW	10	4.5			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.12	765.0			60	15.6	71	N	6	2.7						0	0			Blue sky	
Navy Yard, Portsmouth, N.H	29.57	751.1	60	15.6	53	11.7	93	NNE	12	5.4			10		NE	2.+	51.+			Raining	
Naval Hospital, Yokohama, Japan	29.78	756.4	67	19.4	62	16.7	88	Calm			0		0			0	0			Clear	
Adams, Montevideo, Uruguay	30.24	768.1	62	16.7	60	15.6	82	N			1		2		SW	0	0	None		D clouds	
Alert, N 40° 26′, E. 135° 20′	29.78†	756.4†	64	17.8	64	17.8	83	NE			5–6		10		NE			Long	NE	Drizzling	
Alliance, Constantinople, Turkey	30.20	767.1	71	21.7	68	20.0	79	N			3		9		N					Overcast	
Ashuelot, Che-foo, China	30.30	769.6	59	15.0	57	13.9	58	NNW			4–5		5		N			Long	NE	Squally	
Canonicus, New Orleans, La	30.04	763.0	47	8.3	62	16.7	51	NE			3		3							Fair	
Colorado, New York, N. Y	29.72	754.9	60	15.6	57	13.9	58	NW	31	13.9			3		NW	2.03+	51.6+			Fair	
Despatch, Beikos Bay, Bosphorus	30.21	767.3	68	20.0	67	19.4	84	NE			3		10		NE			Smooth		Threatening	
Franklin, Norfolk, Va	29.92	760.0	58	14.4	56	13.3	??	NNW	6	2.7			2		NNW	1	25.			D. clouds	
Frolic, Barbados, W. I	30.10	764.5	85	29.4	88	31.1	76	E			1		4k		N	Light	Light	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.83‡	757.7‡			75	23.9	95	SSE			1		8		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 5° 57′, E. 90° 10′	29.96	761.0			79	26.1	95	W			4–6		10		S&W			Smooth	S&W	Raining	
Lackawana, Esquimault, B. C	29.93	760.2			51	10.6	86	N			0–1		10					Smooth		Raining	
Marion, Smyrna, Turkey	30.03	762.7	77	25.0	77	25.0	82	W			2		9		Calm	0	0	Smooth		D. clouds	
Michigan, Detroit, Michigan	29.55	750.6	54	12.2	42	5.6	66	NW			2		0							Clear	
Monocacy, Hakodadi, Japan	29.70	754.4	63	17.2	59	15.0	82	NNE			1		10			0	0			D. clouds	
Monongahela, N. 35° 22′, W. 65° 00′	29.70	754.4	77	25.0	77	25.0	77	WSW			2		k			Light	Light	Light	S	D. clouds	
New Hampshire, Port Royal, S. C	30.09	764.3			74	23.3	25	NE	21	9 4			3		S					D. clouds	
Omaha, Valparaiso, Chili	30.00	762.0	64	17.8	60	15.6	82	N	1	0.4			8		Calm	0	0	Smooth		Hazy	
Onward, Callao, Peru	30.06†	763 5†	69	20.6	68	20.0	90	Calm			0		10					Long	W	Misty	
Ossipee, New London, Conn	29.50	749 3	65	18.3	58	14.4	70	N			8		1		N					D. clouds	
Palos, Shanghai, China	30.23	767.8	75	23.9	67	19.4	75	ENE			3		4		Calm	0	0			Clear	
Pensacola, Mare Island, Cal	30.09	764.3			61	16.1	88	SW			1		0			0	0			Clear	
Plymouth, Norfolk, Va	30.12	765.0	62	16.7	59	15.0	59	NW			5		1		NW					Clear	
Ranger, Nagasaki, Japan	30.18	766.6			66	18.9	64	NE			2		3		NW	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.91	759.7			66	18.9	89	WNW			2		1		SE					Blue sky	
Santee, Annapolis, Md	29.90	759.4	68	20.0	54	12.2	55	NW			6		1			2.00	50.8			Clear	
St. Louis, League Island, Pa	29.73	755.1	62	16.7	56	13 3	69	NNW			10		0			1.93	49.0			Clear	
Tennessee, Yokohama, Japan	29.77	756.1	67	19.4	65	18.3	78	W	2	0.9			1			0	0	Smooth		D. clouds	
Trenton, Marseilles, France	30.11	764.8	71	21.7	68	20.0	74	N	9	4.0			3		N	0.02	5.			D. clouds	
Vandalia, Smyrna, Turkey	30.07	763.8	78	25 6	78	25.6	78	W			3		9		W					D. clouds	
Wabash, Boston, Mass	29.47	748.5	56	13.3	54	12.2	87	N	21	9.4			10		Calm	1.98	50.3			Squally	
Wyoming, Washington, D. C	30.18†	766.6†	64	17.8	55	12.8		N			3–5									Squally	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Yokohama, Japan.			30.02*	762.5*	64	17.8	89	NW			1		3		NE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 36° 50′, E. 166° 22′			30.27†	768.8†	67	19.4		SE			5		5		SE	Smooth	SE	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic,																			Capt. John Metcalf.
S. S. Gaelic, N. 29° 31′, E. 130° 00′			30.15*	765.8*	74	23.3	??	NNW			4		c		NW	Smooth	NE	D clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 26° 38′, W. 150° 21′			30.01	762.2	74	23.3	81	S			3		3		S	Moderate.	NW	Showery	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction From—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 42° 00′, W. 64° 15′			*29.35	*745.5	69	20.6	??	SE			4		5		WSW	Moderate	SE	Hazy	Captain Shackelford.
S. S. Indiana, N. 49° 25′, W. 23° 07′			30.07†	763 8†	51	10.6		N			6		1		NNE	Moderate	E	Clear	Captain Sargent.
S. S. Ohio, Liverpool.			30.52	775.2	54	12.2	84	S			2				S				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			29.83	757.7	69	20.6	75	N	7	3.1		0	0					Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 6, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.12	765.0	73.4	23.0	55	NW			2		1			0	0	Very fair	Michel.
Algiers			30.06	763.5	70.9	21.6	63	NW			2		8			0.217	5.5	Very cloudy	Peter.
La Calle			29.96	761.0	70.9	21.6	73	W			3		6			0.551	14.0	Cloudy	Fleury.
Tunis			29.89	759.2	73.8	23.2	49	NW			5		6			0	0	Cloudy	Jacques.
Sfax			30.00	761.9	77.0	25.0		N			3		6			0	0	Cloudy	Husson.
Saida			30.06	763.4	67.6	19.8		N			2		2			0	0	Fair	Millot.
Tebessa			29.97	761.2				W			2		2			0	0	Fair	Bourgeois.
Geriville			30.00	762.0	71.2	21.8	38	W			4		2			0	0	Fair	Lemaillot.
Laghouat			30.07	763.6	66.2	19.0	54	W			4		4			0	0	Cloudy	François.
Biskra			30.05	763.2	78.4	25.8	38	NW			3		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Agram	29.72	755.0	30.29	769.3	48.2	9.0	66	NE			5		10			0.413	10.5	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.86	758.4	30.67	778.9	41.0	5.0	69	ENE			5		10			0	0		Dr. Wierzbiski.
Eperies	29.58	751.2	30.49	774.4	43.3	6.3	63	N			3		6c;s		S	0	0		Julius Mikolik.
Gratz	29.10	739.1	30.38	771.7	48.9	9.4	73	NW			4		10			0	0		Andreas Rospini.
Hermannstadt	28.90	734.0	30.37	771.3	44.8	7.1	69	ESE			4		10			0.041	1.05		Prof. Reissenberger.
Kremsmünster	29.08	738.7	30.48	774.1	42.8	6.0	65	NE			1		10			0.079	2.0		Prof. C. Wagner.
Lemberg	29.61	752.1	30.65	778.4	38.7	3.7	82	NE			1		8			0	0		Dr. T. Staneckl.
Pola	29.90	759.4	30.01	762.2	57.6	14.2	47	ENE			8		8s			0	0		I.R.Hydrographic Office
Szathmar																			Johann Tamas, S. J.
Szegedin					51.4	10.8	90	SE			2		10			0.146	3.70		Karl Stancel.
Trieste	30.01	762.3	30.11	764.9	53.1	11.7	72	ENE			7		9			0	0		P. Busin.
Vienna	29.65	755.7	30.47	774.0	44.8	7.1	61	N			2		10			0.059	1.5		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Arlon	28.99	736.4	30.53	775.5	50.5	10.3	53	NE			5		0			0	0		
Brussels	30.39	772.0	30.60	777.2	53.1	11.7	55	E			5					0	0	Clear	Royal Observatory.
Furnes	30.57	776.5	30.60	777.1	57.7	14.3	61	NNW			4		0			0	0		
Maeseyck	30.44	773.2	30.57	776.5	52.3	11.3	56	NE			4		0			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.44	773.2	30.53	775.4	56.8	13.8		SSW	5	2.2			8			0	0	Hazy	W. Boswell.
Ardrossan	30.60	777.2	30.61	777.5	56	13.3		SSW			2		6					Hazy	William McNeil.
Armagh, Observatory			30.67	779.0	54.0	12.2		SSE	1	0.4			10					Overcast	S. Cull, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.67	779.0	53.4	11.9		SE	10	4.5			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.66	778.7	61.2	16.2		SSE			1		5					D. clouds	J. Dreyer.
Bradford, Yorkshire	30.26	768.6	30.65	778.5	54.1	12.3		E			1		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	82	27.8		NE			1		2					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.66	778.7	60.8	16.0		E			1		1					D. clouds	H. Todd.
Cardington			30.67	779.0	59.0	15.0		SE			1		3					D. clouds	John McLaren.
Chatham, School M. E	30.53	775.4	30.66	778.7	59.2	15.1		NE			3		1					Fine	Lt. W. G. Morris, R. E.
Dartmoor	29.13	739.9	30.62	777.7	55.0	12.8		E			3		3					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.62	777.7	30.64	778.2	56	13.3		WSW			1		2					D. clouds	J. Mac Gowan.
Dover	30.61	777.5	30.64	778.2	56	13.3		ENE			4		2					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.66	778.7	56.5	13.6		SE	0.6	0.3			10					Overcast	Thomas Mackereth.
Falmouth, Observatory	30.40	772.1	30.64	778.2	55.9	13.3		ENE			3		7					Overcast	The Staff.
Fort Napier, (Natal)	27.73	704.3	29.91	759.7	87.5	30.8		NE			2		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.91	759.7	82	27.8		W			2		5					D. clouds	
Galway, Queen's College					55	12.8		ENE			3		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.06	763.5	70.0	21.1		NE			5		7					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.40	772.1	30.61	777.5	54.8	12.7		WSW			4		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.67	779.0	30.68	779.3	56	13.3		ESE			3		0					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.47	773.9	30.65	778.5	61.7	16.5		E			1		0					Blue sky	The Staff, for G. B. Airy.
Guernsey	30.34	770.6	30.56	776.2	60	15.6		NE			3		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.60	777.2	60	15.6		E			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	30.59	777.0	30.65	778.5	57	13.9		W			1		10					Misty	John Tilston.
Jersey	30.27	768.8	30.56	776.2	60.0	15.6		ENE			4		0					Blue sky	J. Fisher.
Kew, Observatory			30.65	778.5	59.3	15.2		ENE	12	5.4								Hazy	The Staff.
Kingstown	30.66	778.7	30.69	779.5	56	13.3		NW			1		10					Foggy	George Mitchell.
Leicester, Museum			30.69	779.5	54.3	12.4		E			1		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.75	755.6	29.82	757.4	75.4	24.1		SW			2		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.41*	747.0*	29.50*	749.3*	59	15.0		W			1		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	83.0	28.3		NW			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.60	774.7	30.69	779.5	62.0	16.7		S			1		3c		S	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	30.14	765.5	30.67	779.0	56.9	13.8		SE			1		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.64	778.2	57	13.9		ENE			1		10c					Solar halo	F. Lucas
Plymouth	30.54	775.7	30.62	777.7	58.0	14.4		E			2		8					D. clouds	John Merrifield.
Roche's Point	30.60	777.2	30.64	778.2															W. Kennedy.
Saint Ann's Head	30.45	773.4	30.65	778.5	55	12.8		ESE			1		4					D. clouds	John O. Walker.
Sandwick Manse, (Orkneys)			30.50	774.7	53.4	11.9		W	18	8.0			5					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.01	762.2	66.6	19.2		ENE			2		10			Blank	Blank	Gloomy	Sergt. W. H. Lyne.
Sheffield	30.44	773.2	30.68	779.3	56.9	13.8		SW			1		8			0	0	Hazy	W. F. Cooper.
Silloth Rectory	30.61	777.5	30.64	778.2	57.2	14.0	76	SW			1		10			0	0	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					53.3	11.8		SW			1		10					Misty	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			30.49	774.4	56	13.3		W			1		4					D. clouds	John Smith.
Stratfield Turgiss	30.43	772.9	30.65	778.5	59.3	15.2		E			1		0					Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso			30.46	773.7	59	15.0		WNW			2		5					D. clouds	John Trotter.
Truro, Royal Institution			30.61	777.5	62	16.7		E			4		8					Gloomy	W. Newcombe.
Valencia, Observatory			30.63	778.0	62.6	17.0		SE	6	2.7			7					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		S			1		5			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.81	757.2	29.85	758.2	76.0	24.4	57	WNW	28	12.5		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.24	768.1	51.0	10.6	88	Calm			0		10n			0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.62	777.7	56.3	13.5		SW			2	8ck				0	0	Fine; cloudy	Andrew Gibb.
Mauritius, Observatory	30.04	763.0	30.23	767.8	73.0	22.8	58	ESE	22.0	9.8		3	4		SE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.05	763.3	30.14	765.5	60.7	15.9	77	ESE	2	0.9			7			0	0	Sultry	R. L. J. Ellery.
Monach Lit-house, (Hebrides)			30.55	776.0	55	12.8		W			4	3	3	W		0.4	10.		J. Youngclause.
North Unst, (Shetland Is.)			30.28	769.1	48	8.9		W			6	5	8	W					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Probably 30.41 in., 772.4 mm., and 30.50 in., 774.7 mm.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Clouds. Amount.	Clouds. Direction.	Rain-fall.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria																	Capt. W. Watson.
S. S. Batavia, N. 43° 0′, W. 59° 55′			29.47	748.5	60	15.6		SW		2		10		4	SW	Foggy	Capt. J. E. Mouland.
Ship Camperdown																	Capt. A. T. Miller.
Brig Catherine																	Capt. Adam Smith.
Barque Celeste																	Capt. D. F. McKechnie
S. S. Hibernia																	Capt. W. R. Cato
Barque Maroon																	Capt. A. T. Brown.
Ship Mikado																	Capt. C. C. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 28′			30.36	771.1	55	12.8		ESE		6		5		3	NW	D. clouds	Capt. H. Manning.
Barque Sorata																	Capt. Jas. J. Price.
Schooner Traveller, N. 46° 10′, W. 40° 20′			30.26	768.6	58	14.4		ENE		5		6		5	NNW; NE	Hazy	Capt. Alex Simpson.

NOTE.—*The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet;* weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.25	666.7			70.2	21.2	86	NE			2		1pcsd		E	Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.70	779.8	30.75	781.0	48.6	9.2	68	SSE			4		0						
Fanöe	30.69	779.6	30.71	780.1	50.4	10.2	67	SSW			4		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.60	751.9	29.65	753.0	48.0	8.9	78	SW			8		8					Raining	
Thorshavn, (Faröe)	30.17	766.4	30.21	767.3	51.1	10.6	99	WSW			6		7						
Vestervig	30.48	774.1	30.65	778.4	49.3	9.6	84	SSW			4		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.98	761.5	30.53	775.5	59.0	15	23	NE			4		0			0	0	Clear.	Collignon, Director.
Amiens, Normal School	30.49	774.4	30.60	777.2	58.3	14.6	52	E			3		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	29.99	761.7	30.07	763.7	62.6	17	47	N			4		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.84	757.9	30.41	772.4	57.6	14.2	34	E			6		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	30.25	768.3	30.41	772.5	61.2	16.2	36	NE	15.0	6.7						0	0		Albert Cheux.
Beauvais	30.26	768.5	30.55	775.9	55 9	13.3	47	NNE			3		0			0	0	Clear	Normal School.
Besançon	29.42	747.3	30.32	770.1	53.2	11.8	57	E			8		2		E	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.36	745.7	30.28	769.2	56.3	13.5	53	NE			6		2cn		N	0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.77	756.2	30.33	770.3	57.4	14.1	57	NE			6		0			0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	30.23	767.7	30.45	773.3	59.5	15.3	53	NE			4		0			0	0		The Staff.
Carcassonne, Normal School	29.75	755.7	30.16	766.1	65.1	18.4	84	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen																			Normal School.
Chartres, Normal School	29.87	758.7	30.44	773.1	59.7	15.4	85	NE			3		0			0	0	Clear	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.17	766.4	30.54	775.6	57.9	14.4	53	NE			3		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.92	734.5	30.28	769.1	55.0	12.8	53	N			3		8		N	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.56	750.8	30.45	773.4	54.0	12.2	48	ENE			6		0			0	0	Clear	Dr. Goulet, Director.
Commune de Grénsque*	28.94	735.1	30.08	764.1	66.0	18.9	37	NW			2		8		NW	0	0	¾ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.16	766.0	30.61	777.4	59.7	15.4	47	NE			8		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.15	765.9	30.47	773.8	57.6	14.2	40	NNE			6		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.33	744.9	30.26	768.4	55.2	12.9	50	NE			6		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.38	771.7	30.48	774.2	62.6	17.0	89	ENE			4		0			0	0	Clear.	T. Carré, Director.
Mâcon, Normal School	29.54	750.4	30.25	768.4	55.6	13.1	75	NE			6		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.31	744.4	30.37	771.4	51.4	10.8	61	NNE			6		1		NE	0	0	Clear	Normal School
Nismes, Normal School	29.87	758.8	30.08	763.9	64.4	18	73	N			2		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.98	761.5	30.35	771.0	59.0	15	34	NE			8		0			0	0	Clear	Bernard, Director.
Paris, Observatory	30.26	768.5	30.50	774.7	57.4	14.1	39	NE			2		0			0	0	Clear	National Observatory.
Privas	29.12	739.7	30.23	767.7	57.9	14.4	69	N			4		5		N	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.31	769.9	30.34	770.7	59.7	15.4	55	NE			4		0			0	0	Clear.	Lt. Decante, Director.
Rouen, Normal School	30.47	774.0	30.56	776.2	61.3	16.3	39	NE			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	29.16	740.6	30.23	767.8	63.0	17.2	60	W			2		0			0	0	Clear.	T. Hugues, Director.
Villefranche	29.53	750.0	30.25	768.3	56.5	13.6	55	N			6		2		NE	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.7	29.82	757.4	82.4	28										0.71	18.		L'Abbé Marchési.
Marseilles, Observatory			30.02	762.5	69.6	20.9	73	W			1		8			0	0	Cloudy	The Staff.
Mont-Louis	24.96	634.0	30.28	769.0	50.0	10.0	30	N	11.2	5.00			1		N	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.21	767.4	30.49	774.4	57.6	14.2	41	NE			4		0			0	0	Clear	Marié Davy, Director.
Perpignan			30.10	764.6	65.8	18.8	34	NE	14.9	6.66			2		NNE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.41	543.7			39.4	4.1		N			1		2					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.64	575.0			44.2	6.8		N			1		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.33	770.4	30.50	774.6	59.0	15.0	42	NNE			3		0			0	0	Very clear	E. Renou.
Toulouse, Observatory	29.50	749.4	30.23	767.9	59.2	15.1	48	NW			3		1			0	0		The Staff.
Tours	30.19	766.8	30.39	771.8	60.3	15.7	32	ENE			5		0			0	0	Clear	C. Marquet.
Versailles, (near Paris)			30.50	774.6	57.6	14.2	47	E			4		0			0	0	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.19	766.9	30.22	767.6	61.5	16 4	74	NE	4.0	1.8			4k			0	0		Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.56	776.2	30.73	780.5	47.3	8.5	49	E			2		0			0	0		Prof. Arndt.
Breslau	30.15	765.8	30.69	779.6	44.8	7.1	46	NE			4		1			0	0		Royal University Obs'y.
Carlsruhe	30.04	762.9	30.52	775.1	53.4	11.9	30	NE			5		0			0	0		Albert Senz.
Cassel	30.08	763.9	30.70	779.7	53.2	11.8	38	E			6		1	ENE		0	0		Dr. H. Möhl.
Crefeld	30.44	773.1	30.60	777.3	55.2	12.9	54	NE			2		0			0	0		Director Lose.
Emden	30.67	778.9	30.70	779.8	50.4	10.2	60	E			2		0			0	0		Prof. Prestel.
Frankfort on the Main	30.22	767.6	30.59	777.0	57.0	13.9	25	NE			3		1			0	0		Physical Society.
Friedrichshafen	28.91	734.4	30.37	771.5	50.7	10.4	47	NE			10		1	NE		0	0		M. Wilhelm.
Hamburg	30.67	779.1	30.75	781.0	49.3	9.6	58	SE			3		0			0	0	Very fine	Captain F. Hegemann.
Kiel	30.71	780.1	30.73	780.5	49.6	9.8	62	E			1		0			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.71	780.0	30.79	782.1	46.2	7.9	50	SE										Clear	Prof. E. Luther.
Köslin			30.76	781.3	47.3	8.5		Calm			0		0			0	0		H. Müller.
Leipsic, Observatory	30.29	769.3	30.72	780.4	46.4	8.0	55	NE			2		2	ENE		0	0		Prof. Bruhns.
Memel, Naval School	30.80	782.2	30.84	783.4	43.3	6.3	56	SSW			1		0						Reinbrecht von Skalweit.
Neufahrwasser	30.81	782.5	30.82	782.9	46.4	8.0	57	SSE			1		0			0	0		A. Lothes.
Posen	30.49	774.4	30.79	782.1	44.8	7.1	48	NE			3–4		0					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.90	759.5	30.46	773.7	53.4	11.9	46	NE			6		0			0	0		Dr. Schur.
Stuttgart	29.50	749.3	30.46	773.6	53.6	12.0	36	E			3		0			0	0		Prof. Schoder.
Treves, (Trier)	29.88	758.9	30.41	772.4	55.4	13.0	47	NE			7		0			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.95	735.2	30.48	774.3	50.0	10.0	31	E			3		0			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.81	782.6	30.84	783.3	48.0	8.9	68	ESE			3		0					Clear	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.8	29.95	760.6	72.1	22.3		SW										½ clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.72	755.0	29.78	756.3	85.5	29.7	74	W	22.0?	9.8?			1			0	0	D. clouds	
Deesa	29.30	744.3	29.79	756.6	71.5	21.9	93	NE					10		E	1.13	28.7	Gloomy	
Bombay	29.73	755.1	29.77	756.1	80.0	26.7	89	SSE	40.0	17.9			10	S	S	2.79	70.4	Overcast	
Poona	27.75	704.8	29.75	755.6	76.8	24.9	82	S					10	SE	S	0	0	D. clouds	
Lahore	29.18	741.2	29.93	760.2	74.8	23.8	81	E	4.5	2.0			6			0.64	16.3	Blue sky	
Belgaum	27.34	694.4	29.90	759.4	72.7	22.6	90	W	5.0	2.2			8		W	0.04	1.0	D. clouds	
Bangalore																			
Roorkee	29.03	737.4	29.95	760.7	72.8	22.7	88	Calm	2.3	1.0			10			0.02	0.5		
Agra	29.32	744.6	29.89	759.2	73.8	23.2	86	E								0	0		
Trichinopoly																			
Nagpur	28.81	731.8	29.87	758.7	73.6	23.1	94	S	3.6	1.6			10			2.42	61.5	Gloomy	
Madras																			
Lucknow	29.53	750.1	29.91	759.6	76.3	24.6	91	E	5.8	2.6			10		E	0	0	Thunder	
Allahabad	29.54	750.3	29.85	758.1	85.6	29.7	65	NE	4.3	1.9			10		E	0	0	Thunder; lightn'g	
Patna	29.74	755.3	29.92	759.9	77.7	25.4	86	E	4.2	1.9			10	E	E	2.97	75.4	Overcast	
Hazaribagh	27.88	708.1	29.91	759.6	75.3	24.1	74	ENE	10.2	4.6			10			0	0		
Cuttack	29.77	756.1	29.85	758.2	82.8	28.2	74	S	5.3	2.4			2			0	0	D. clouds	
Calcutta (Alipore)	29.91	759.7	29.93	760.3	79.7	26.5	79	S	3.0	1.3			8			0	0	Overcast	
Goalpara	29.52	749.7	29.90	759.5	82.5	28.1	70	Calm	0.4	0.2			0			0	0	Blue sky	
Chittagong	29.84	758.0	29.94	760.3	81.1	27.3	83	NW	5.0	2.2			0			0	0	Blue sky	
Sibsagar	29.60	751.8	29.94	760.4	80.8	27.1	76	Calm	2.1	0.9			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.48	723.5	29.85	758.3	78.9	26.1	83	SW	4.7	2.1			10	SW	SW	0	0	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Valdobbia	22.24	565.0	30.11	764.8	33.6	0.9	95	NE			1		9	NE		0	0		Ab. Dom. Morgini.
Stelvio	22.24	564.9	30.13	765.2	34.7	1.5		NNE			2		6	WSW		0	0		Signora Ernesta Manfredi.
Udine	29.69	754.2	30.10	764.6	61.2	16.2	33	E	7.4	3.3			4			0	0		Prof. Giovanni Clodig.
Padua	29.99	761.8	30.10	764.6	61.9	16.6	46	E	19.2	8.6			6	N		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.90	759.5	30.10	764.4	64.2	17.9	37	SE	3.1	1.4			1	E		0	0		Conte Alm. Da Schio.
Verona	29.87	758.6	30.09	764.2	69.8	21.0	43	E	7.4	3.3			1	NE		0	0		Dott. B. Bertoncelli.
Bergamo	28.78	731.0	30.09	764.3	62.6	17.0	62	S			1		5			0	0		Prof. Trionfini Carlo.
Domodossola	29.02	737.1	30.05	763.2	62.4	16.9	64	S			6		3			0.059	1.5		Prof. Giuseppe Calza
Milan	29.59	751.5	30.10	764.6	64.4	18.0	79	W			1		3	ESE		0.063	1.6		Ab. Gio. Capelli.
Pavia	29.76	755.8	30.10	764.6	62.2	16.8	45	E			4		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.20	741.7	30.11	764.8	60.8	16.0	77	WNW	0.7	0.3			1			0	0		Prof. P. F. Denza.
Mondovi	28.20	716.2	30.11	764.9	57.2	14.0	56	NW			4		7	N		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.80	756.9	30.02	762.5	68.9	20.5	26	NE			6		6			0	0		Prof. L. Vassallo.
Genoa	29.84	758.0	30.01	762.3	69.6	20.9	25	N	6.9	3.1			2	NE		0	0		Prof. G. M. Garibaldi
Placenza	29.86	758.4	30.11	764.9	62.2	16.8	41	E	8.1	3.6			2	E		0	0		Dott. G Manzi.
Parma	29.77	756.2	30.09	764.2	62.2	16.8	48	SE			6		5			0	0		Prof. P. Pigorini.
Florence	29.77	756.1	30.02	762.6	61.7	16.5	56	N			8		10	NE		0	0		Cav. F Meucci.
Leghorn	29.88	758.9	29.96	761.0	65.5	18.6	42	ENE	18.1	8.1			4	W		0	0		Prof. P. Monte.
Siena	28.76	730.5	29.97	761.1	59.5	15.3	55	NE	13.7	6.1			8	NE		0.008	0.2		Prof. L. Toscani.
Urbino	28.49	723.6	30.05	763.3	52.3	11.3	87	NE			4		10			0.642	16.3		Prof. P. Serpieri.
Pesaro	29.99	761.7	30.04	762.9	59.2	15.1	69	NE	62.2	27.8			10	NE		0.012	0.3		Prof. Luigi Guidi.
Ancona	29.90	759.5	30.01	762.2	61.9	16.6	59	NE			6		10			0.067	1.7		Prof. F. DeBosis.
Grosseto	29.84	757.8	29.95	760.6	63.7	17.6	57	NNE			6		8	SE		0.024	0.6		Avv. P. Ponticelli.
Rome	29.60	751.8	29.77	756.2	68.5	20.3	49	N	17.4	7.8			10			0.047	1.2		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.55	750.6	29.75	755.6	72.3	22.4	51	NE			2		9	SW		1.197	30.4		Prof. L. Palmieri.
Lecce	29.43	747.6	29.68	753.9	70.9	21.6	74	SSW	17.4	7.8			6			0.606	15.4		Prof. C. De Giorgi.
Cosenza	28.91	734.4	29.79	756.6	68.7	20.4	74	SSE	1.8	0.8			10			0.118	3.0		Prof. F. D. Conti.
Cagliari	29.56	750.8	29.75	755.6	64.8	18.2	78	NW			6		10	NW		0.256	6.5		Prof. A. Pacinotti.
Riposto, (Sicily)	29.60	751.9	29.65	753.1	72.7	22.6	61	E			2		8			0	0		Prof. F. Cafiero.
Palermo	29.41	746.9	29.65	753.2	71.1	21.7	51	W	8.7	3.9			7			0.528	13.4		Prof. G. Cacciatore.
Caltanissetta	27.84	707.2	29.76	755.8	61.3	16.3	87	W			4		10	E		0.799	20.3		Prof. A. Pagani.
Syracuse	29.67	753.6	29.74	755.5	71.2	21.8	65	WSW			6		6	W		0.484	12.3		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.21	741.9	29.76	756.0	68.4	20.2	62	SSW	0	0			9			1.441	36.6		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.56	750.8	29.66	753.4	65.5	18.6	76	S	10.5	4.7		1c				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.21	589.5	30.29	769.3	54.5	12.5	61	Calm	0	0		6c	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.65	778.5	30.65	778.5	54.3	12.4		NE			4					0	0		
Groningen	30.63	778.0	30.69	779.4	50.2	10.1		E			2					0	0		
Helder	30.67	779.1	30.67	779.1	51.1	10.6		E			2					0	0		
Hellevoetsluis			30.63	778.1	55.8	13.2	70	ENE			4								
Utrecht	30.61	777.5	30.66	778.7	54.5	12.5	49	E			3		0			0	0	Clear	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.42	772.6	30.47	774.0	50.0	10.0	100	S	24.4	10.9			8			1.890	48.0	Raining	
Brönö	30.00	761.9	30.04	762.9	46.4	8.0	92	SW	9	4			8			0	0		
Christiania	30.34	770.6	30.49	774.4	50.2	10.1	68	SW	9	4			10			0	0		
Tromsö	29.69	754.1	29.73	755.2	44.2	6.8	80	W	9	4			10			0.315	8.0	Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.52	749.9	29.72	754.8	59.7	15.4	85	WSW	3.1	1.4			4			0.945	24.0		Dr. J. A. Sampaio
Campo Major	29.13	740.0	30.14	765.5	72.1	22.3	40	ENE	4.3	1.9			4			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.91	759.8	29.98	761.6	75.0	23.9	82	S	1.8	0.8			5			0.512	13.0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.78	756.4	30.13	765.4	69.4	20.8	52	NE	18.6	8.3			6	SSW		0	0	Solar halo	The Staff.
Ponta Delgada, (Azores)	29.72	755.0	29.80	756.8	65.5	18.6	59	SW	6.3	2.8			3			1.650	41.9		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Observer.
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Warsaw	30.32	770.0	30.76	781.2	43.7	6.5	48	E	11	5			0						Astronomical Obs.
Wilna	30.38	771.7	30.82	782.9	43.2	6.2	58	SSW	2	1			0						Astronomical Obs.
Dorpat	30.43	772.9	30.68	779.3	44.2	6.8	53	W	11	5			1						Physical Cabinet.
St. Petersburg	30.52	775.2	30.54	775.6	43.9	6.6	88	WSW	13	6			10						Central Physical Obs
Kuopio	29.95	760.8	30.28	769.2	41.2	5.1	90	SW	13	6			10						Ch. Forsten.
Kieff	30.01	762.3	30.68	779.2	40.8	4.9	52	NNE	9	4			6						Physical Cabinet.
Nikolaiev	30.50	774.6	30.57	776.4	44.6	7.0	47	ENE	22	10			2						Kurdakof.
Kertch	30.38	771.6	30.40	772.1	47.1	8.4	71	ENE	13	6			8						Lagorio.
Moscow	30.00	762.1	30.59	776.9	32.4	0.2	78	NNW	9	4			9						Meteorological Obs.
Lugan	30.28	769.0	30.49	774.4	40.3	4.6	50	NNE	22	10			8						Meteorological Obs.
Archangel	30.16	766.0	30.18	766.5	38.1	3.4	80	SSW	13	6			10						Ogorodnikof.
Tiflis	28.67	728.1	30.07	763.8	62.8	17.1	89	Calm	0	0			10					Raining	Physical Observatory.
Astrakhan	30.39	771.8	30.30	769.7	43.9	6.6	42	NNE	11	5			9						Sebastianof.
Kasan	29.78	756.3	30.06	763.4	31.3	— 0.4	70	NW	7	3			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	28.60	726.3	29.57	751.1	27.9	— 2.3	92	NE	13	6			10					Snowing	Meteorological Obs.
Nukuss	29.71	754.5	29.93	760.3	70.7	21.5	45	N	0	0			0						
Kasaly																			Bobrof.
Tashkend	28.44	722.4	30.14	765.5	59.0	15.0	86	Calm	0	0			1						Michelson.
Barnaul	29.71	754.7	30.25	768.3	40.6	4.8	38		9	4			7						Meteorological Obs.
Yeniseisk	30.20	767.0	30.34	770.7	33.1	0.6	85	WNW	2	1			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.98	761.5	30.12	765.1	63.1	17.3	29	S	13	6			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					42.8	6.0	85	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Navenan.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.95	709.9	30.16	766.1	62.2	16.8	41	NE	12.0	5.34		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.02	762.6	30.11	764.6	80.8	27.1	68	N	11.9	5.3		0	3k			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.98	761.5	30.08	764.0	75.7	24.3	45	ESE	22.5	10.06		2	4	N	W	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.93	760.1	83.1	28.4	84	SE	0	0		1c	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.08	764.0	30.12	765.0	41.7	5.4		SW			4		10					Raining	
Umea	30.13	765.2	30.18	766.5	43.2	6.2	82	W			2		10			0	0		
Hernosand	30.16	766.0	30.21	767.3	47.1	8.4	84	E			2		10			0	0		
Stockholm	30.34	770.5	30.51	775.0	49.6	9.8	82	WSW			6		7			0	0		
Wisby	30.60	777.1	30.65	778.6	47.1	8.4	65	WSW			6		3			0	0		
Sub-Series.																			
Upsala	30.40	772.1	30.47	774.0	47.8	8.8	67	WSW	20.4	9.1			10		WSW	0	0		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Geneva	28.81	731.7	30.25	768.4	48.2	9.0	67	NNE			6		9			0	0	Covered	The Observatory.
Zurich	28.71	729.1	30.35	771.0	50.0	10.0	55	E			4		2?			0	0	Covered?	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +5.3 mm; Thermometer, —5.7 cent.; Relative Humidity, —2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Constantinople			30.06	763.5	67.5	19.7	76	NE	20	9.0			10		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.01	762.2	62.6	17		NE			8		10					Raining	B. Stéfanidès.
Valona			29.88	759.0	66.6	19.2		S			2		10			1.02	26.	Covered	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.95	760.7	88.9	31.6	60	WSW			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.	29.79	756.7	29.86	758.4	44.5	6.9	75	NW	3	1.3			0						Hon. J. Ferguson.
Brockville, Ontario			30.21	767.3	45	7.2		W	5	2.2		0	0			0	0	Clear.	W. R. Bigg.
*Chatham, N. B.			29.84	757.9	40	4.4	75	NW	7	3.1		0	0			0.34	8.6	Clear	G. A. Blair.
Charlottetown, P. E. Island.			29.70	755.9	47	8.3	84	NW	18	8.0			10s		Calm	2.515	63.88	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.95	760.7	30.15	765.8	40.3	4.6	75	W			4	0	0			0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	29.86	758.4	29.89	759.2	40.3	4.6	80	W			2					0.09	2.3	Bright	H. A. Johnson.
Esquimault, B. C.	30.01	762.2	30.06	763.5	50.3	10.2	100	N					10			0.21	5.3	Rain & fog	W. H. Bevis.
*Father Point, Quebec			29.93	760.2	40	4.4	79	SW	13	5.8		2cs	0	W		0	0	Clear	J. McWilliams.
Fredericton, N. B.	29.90	759.4	29.96	761.0	40.1	4.5	73	NW	11	4.9		0	0			0.06	1.5	Clear	Prof. Harrison.
*Fort Garry, Manitoba			30.11	764.8	24	— 4.4	98	SW	5	2.2		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.48	748.8	30.28	769.1	49.7	9.8	73	NW			3	4k	0	NW		0	0	Clearing	H. J. Strang, M. A.
Granton, Ontario	29.14	740.1	30.29	769.4	35	1.7	90	W			1	4c	0	E		0.07	1.8	Clear	James Grant.
*Halifax, N. S.	29.37	751.1	29.71	754.6	47	8.3	85	NW	20	8.9			10n		NW	1.140	28.96	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.94	760.5	30.32	770.1	44.7	7.1	64	W			4	6c	0	W		0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.71	754.6	29.73	755.1	64	17.8	86	SE			5		10n			0	0	Foggy	E. Weedon.
*Kingston, Ontario	29.90	759.4	30.28	769.1	40	4.4	82	W	15	6.7		0	Sm'e		W	0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.89	759.2	30.09	764.3	43	6.1	77	W	8	3.6		0	2ks		W	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.50	749.3	30.21	767.3	37	2.8	95	N	3	1.3		2k	8ks	W	W	0.15	3.8	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.46	748.3	30.23	767.8	42.9	6.1	79	NW			0		9ks			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.59	751.6	30.31	769.9	38	8.3	73	W	7	3.1		5k	0	NW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.61	752.1	29.66	753.4	49.3	9.6		NW	30	13.4						1.70	43.2	Raining	Peter Grant.
Port Stanley, Ontario	29.63	752.6	30.29	769.4	41	5.0	64	W	10	4.5		0	0			0	0	Clear	M. Payne.
*Quebec, Quebec	29.69	754.1	30.01	762.2	42	5.6	74	SW	4	1.8			10n		SW	0	0	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.71	754.6	30.19	766.8	36	2.2	90	W	8	3.6		8k	0	NW		0.07	1.8	Fair	W. H. McIntyre.
St. John, N. B.	29.75	755.6	29.91	759.7	41	5.0	74	NW	6	2.7		0	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.48	748.8	30.19	766.8	50	10.0	68	W	9	4.0			10ks		W	0.06	1.5	Cloudy	K. Stewart.
Stayner, Ontario			30.23	767.8	44	6.7	76	W	3	1.3			10n		NW	0.04	1.0	Cloudy	R. J. Cole.
Stratford, Ontario	28.95	735.3	30.27	768.8	39.2	4.0	88	W	5	2.2			7s			0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.52	749.8	29.55	750.6	54	12.2	99	NW	6	2.7			Fog			1.24	31.5	Cloudy	T. C. Hill.
*Toronto, Ontario	29.89	759.2	30.28	769.1	44	6.7	67	W	6	2.7			10ks		NW	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					57.0	13.9	100	SE					10n			0.22	5.6	Stormy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.95	760.7	30.19	766.8	43	6.1	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Alpena, Michigan	29.54	750.3	30.21	767.3	41	5.0	73	SW	1	0.4	.....	.....	10s	.....	SW	0.02	0.5	Cloudy	
Atlantic City, New Jersey	30.23	767.8	30.25	768.3	49	9.4	63	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.17	766.3	30.36	771.1	53	11.7	61	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Baltimore, Maryland	30.24	768.1	30.29	769.4	50	10.0	58	NW	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Clear.	
Barnegat, New Jersey	30.21	767.3	30.23	767.8	50	10 0	64	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	28 15	715.0	29.96	761.0	37	2.8	90	E	3	1.3	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Boise City, Idaho	27.36	694.9	30.04	763.0	41	5.0	91	S	1	0.4	.....	0	5s	.....	Calm	0.03	0.8	Fair	
Boston, Massachusetts	29.96	761.0	30.11	764.8	44	6.7	59	W	8	3.6	.....	0	0	.....	.....	0.01	0.3	Clear.	
Brackettville, Texas	28.82	732.0	29.84	757 9	69	20.6	65	E	6	2.7	.....	.....	10ks	.....	SE	0	0	Cloudy	
Breckenridge, Minnesota	29.15	740.4	30.22	767.6	21	− 6.1	85	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.02	762.5	30.09	764.3	76	24.4	86	E	4	1.8	.....	2c	8ck	Calm	SE	0	0	Cloudy	
Buffalo, New York	29.54	750.3	30.26	768.6	47	8.3	55	W	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Burlington, Vermont	29.88	758.9	30.15	765.8	44	6.7	67	NW	9	4.0	.....	2k	0	Calm	.....	0	0	Fair	
Cairo, Illinois	30.00	762.0	30.40	772.1	51	10.6	72	NE	4	1.8	.....	10ck	0	N	.....	0	0	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26 83	681.5	30.32	770.1	51	10.6	52	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	27.44	697.0	30.01	762.2	37	2.8	80	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.19	766.8	30.20	767.1	60	15.6	55	NE	24	10.7	.....	5k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.25	768.3	30.28	769.1	61	16.1	55	N	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.35	770.9	30.36	771.1	68	20.0	60	NE	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.23	767.8	30.26	768.6	56	13.3	56	NW	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.25	768.3	30.32	770.1	58	14.4	58	NE	18	8.0	.....	0	0	.....	.....	0	0	Clear.	
Cheyenne, Wyoming	24.03	610.4	29.97	761.2	38	3.3	71	SW	2	0.9	.....	2ck	0	SW	.....	0.13	3.3	Fair	
Chicago, Illinois	29.61	752.1	30.33	770.4	42	5.6	66	W	5	2.2	.....	0	Fog	.....	Calm	0	0	Foggy	
Cincinnati, Ohio	29.65	753.1	30.32	770.1	44	6.7	67	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.61	752.1	30.35	770.9	46	7.8	69	SE	4	1.8	.....	5k	0	SE	.....	Inap.	Inap.	Fair	
Concho, Texas	28.16	715.3	29.81	757.2	64	17.8	78	SE	16	7.2	.....	4cs	0	SE	.....	0	0	Cloudy	
Corsicana, Texas	29.71	754.6	30.18	766.6	61	16.1	55	SE	7	3.1	.....	.....	10s	.....	SE	0	0	Cloudy	
Davenport, Iowa	29.70	754.4	30.37	771.4	41	5.0	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Denison, Texas	29.42	747.3	30.22	767.6	54	12.2	67	E	8	3.6	.....	10k	0	E	.....	0	6	Threatening	
Denver, Colorado	24.81	630.2	30.03	762.7	38	3.3	46	S	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Detroit, Michigan	29.61	752.1	30.30	769.6	40	4.4	73	W	3	1.3	.....	Haze	Haze	Calm	Calm	Inap.	Inap.	Hazy	
Dodge City, Kansas	27.49	698.2	29.80	756.9	48	8.9	85	SE	14	6.3	.....	.....	10s	.....	SE	0.01	0.3	Cloudy	
Dubuque, Iowa	29.61	752.1	30.35	770.9	35	1.7	90	W	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.47	748.5	30.17	766.3	38	3.3	71	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Eagle Pass, Texas	29.28	743.7	30.01	762.2	71	21.7	75	NE	3	1.3	.....	.....	10s	.....	S	Inap.	Inap.	Threatening	
Eastport, Maine	29.85	758.2	29.92	760.0	43	6.1	59	N	15	6.7	.....	0	0	.....	.....	0.08	2.0	Clear	
Erie, Pennsylvania	29.56	750.8	30.28	769.1	51	10.6	52	NW	4	1.8	.....	8k	2s	NW	.....	0.22	5.6	Cloudy	
Escanaba, Michigan	29.55	750.6	30.23	767.8	36	2.2	62	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.40	721 3	30.00	762.0	70	21.1	32	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Fort Bayard, New Mexico	24.12	612.6	30.12	765.0	52	11.1	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.59	650.0	.....	.....	46	7.8	77	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.69	754.1	30.25	768.3	46	7.8	68	SE	9	4.0	.....	5ck	0	NW	.....	0	0	Fair	
Fort Griffin, Texas	28.85	732.8	30.12	765.0	56	13.3	77	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.94	735.1	30.06	763.5	54	12.2	65	E	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Fort Sully, Dakota	28.36	720.3	30.04	763.0	45	7.2	100	SE	6	2.7	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Galveston, Texas	30.10	764.5	30.14	765.5	72	22.2	85	E	11	4.9	.....	5ck	0	W	.....	0	0	Fair	
Grand Haven, Michigan	29.62	752.3	30.30	769.6	38	3.3	80	NW	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Clear.	
Indianapolis, Indiana	29.56	750.8	30.37	771.4	42	5.6	83	Calm	0	0	.....	0	Fog	.....	.....	0	0	Clear	
Indianola, Texas	30.10	764.5	30.12	765.0	73	22.8	85	E	18	8.0	.....	.....	10ks	.....	E	0.06	1.5	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.18	766.6	30.21	767.3	62	16.7	66	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.68	753.9	30.13	765.3	46	7.8	78	E	5	2.2	.....	5ck	0	Calm	.....	0	0	Fair	
Key West, Florida	30.04	763.0	30.08	764.0	76.0	24.4	64	N	12	5.4	.....	2c	1s	Calm	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.26	768.6	30.28	769.1	61	16.1	94	N	32	14.3	.....	2k	0	N	.....	0	0	Fair	
Knoxville, Tennessee	29.35	745.5	30.40	772.1	43	6.1	83	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.54	750.3	30.30	769.6	37	2.8	80	S	7	3.1	.....	.....	Fog	.....	.....	0	0	Foggy	
La Mesilla, New Mexico	26.11	663.2	30.26	768.6	49	9.4	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	78	25.6	77	SE	4	1.8	.....	10cs	0	Calm	.....	0	0	Cloudy	
Leavenworth, Kansas	29.38	746.2	30.24	768.1	48	8.9	85	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Los Angeles, California	29.63	752.6	29.97	761.2	60	15.6	88	N	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	
Louisville, Kentucky	29.80	756.9	30.38	771.6	47	8.3	76	S	1	0.4	.....	0	Fog	.....	S	0	0	Foggy	
Lynchburg, Virginia	29.67	753.6	30.36	771.1	54	12.2	61	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.	
Maricopa Wells, Arizona	.....	.....	.....	.....	54	12.2	62	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.40	746.7	30.12	765.0	40	4.4	56	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.47	723.1	30.20	767.1	66	18.9	68	E	6	2.7	.....	.....	10s	.....	.....	0	0	Cloudy	
Memphis, Tennessee	30.02	762.5	30.35	770.9	51	10.6	71	NE	4	1.8	.....	.....	10s	.....	SW	0	0	Cloudy	
Milwaukee, Wisconsin	29.60	751.8	30.32	770.1	36	2.2	80	W	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Mobile, Alabama	30.23	767.8	30.28	769.1	54	12.2	86	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.09	764.3	30.33	770.4	51	10.6	78	N	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Clear	
Morgantown, West Virginia	29.27	743.4	30.36	771 1	44	6.7	67	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Mt. Washington, N. H	25.58	598.9	29.94	760.5	20	− 6.7	100	NW	65	29.0	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.84	757.9	30.40	772.1	46	7.8	85	Calm	0	0	.....	2ck	2ks	SW	Calm	0	0	Fair	
New Haven, Connecticut	30.07	763.8	30.19	766.8	48	8.9	61	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear.	
New London, Connecticut	30.12	765.0	30.17	766.3	50	10.0	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
New Orleans, Louisiana	30.18	766.6	30.24	768.1	62.5	16.9	59	N	7	3.1	.....	4ck	0	NW	.....	0	0	Fair	
Newport, Rhode Island	30.11	764.8	30.16	766.1	49	9.4	59	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.05	763.3	30.23	767.8	49	9.4	64	NW	10	4.5	.....	0	Sm'e	.....	.....	0	0	Clear.	
Norfolk, Virginia	30.26	768.6	30.32	770.1	55	12.8	62	N	10	4.5	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.14	689.3	29.77	756.1	39	3.9	81	E	7	3.1	.....	.....	10s	.....	E	0.05	1.3	Cloudy	
Olympia, Washington Ter	30.03	762.7	30.07	763.8	55	12.8	93	Calm	0	0	.....	.....	10n	.....	Calm	0.67	17.0	Light rain	
Omaha, Nebraska	29.10	739.1	30.20	767.1	47	8.3	77	N	2	0.9	.....	5ck	2s	W	Calm	0	0	Cloudy	
Oswego, New York	29.91	759.7	30.23	767.8	50	10.0	51	NW	10	4.5	.....	2k	0	NW	.....	0.03	0.8	Fair	
Pembina, Dakota	29.27	743.4	30.15	765.8	22	− 5.6	86	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.23	767.8	30.28	769.1	49	9.4	63	NW	15	6.7	.....	0	Haze	.....	Calm	0	0	Clear.	
Phœnix, Arizona	.....	.....	.....	.....	59	15.0	38	E	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.79	451.8	30.00	762.0	18	− 7.8	100	SW	22	9.8	.....	.....	Haze	.....	.....	0	0	Dense haze.	
Pioche, Nevada	24.15	614.4	29.92	760.0	50	10.0	30	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.49	749.0	30.33	770.4	43	6.1	91	NW	2	0.9	.....	0	Fog	.....	NW	0	0	Clear.	
Port Huron, Michigan	29.59	751.6	30.28	769.1	38	3.3	54	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.01	762.2	30.06	763.5	44	6.7	67	W	8	3.6	.....	0	Fog	.....	.....	0.42	10.7	Clear	
Portland, Oregon	30.09	764 3	30.15	766.8	55	12.8	93	Calm	0	0	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Prescott, Arizona	24.66	626.4	30.02	762.5	45	7.2	36	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.09	764.3	30.10	764.5	68	20.0	60	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.66	753.4	30.01	762.2	68	20.0	38	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.61	752.1	30.24	768.1	44	6.7	67	W	8	3.6	.....	.....	10s	.....	NW	Inap.	Inap	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.64	752.8	30.21	767.3	50.5	10.3	93	Calm	0	0		Haze	5s		Calm	0	0	Fair	
Sacramento, California	29.89	759.2	29.97	761.2	60	15.6	49	NW	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.78	756.4	30.36	771.1	52	11.1	73	Calm	0	0		5ck	1s	Calm	Calm	0	0	Fair	
St. Marks, Florida	30.21	767.3	30.23	767.8	57	13.9	87	N	5	2.2		0	0			0	0	Clear	
St. Paul, Minnesota	29.37	746.0	30.24	768.1	34	1.1	79	SW	5	2.2		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.76	654.3	30.09	764.3	50	10.0	64	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
San Antonio, Texas	29.42	747.3	30.00	762.0	66	18.9	89	NE	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
San Diego, California	29.92	760.0	29.99	761.7	62	16.7	88	N	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.65	753.1	30.35	770.9	46	7.8	76	SW	7	3.1		1k	0	Calm		0	0	Clear	
Sandy Hook, New Jersey	30.19	766.8	30.22	767.6	52	11.1	59	NW	27	12.1		0	Haze			0	0	Clear	
San Francisco, California	29.95	760.7	30.02	762.5	56	13.3	87	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	42	5.6	39	E	7	3.1		0	Haze			0	0	Hazy	
Savannah, Georgia	30.21	767.3	30.30	769.6	56	13.3	74	N	7	3.1		0	0			0	0	Clear	
Shreveport, Louisiana	30.03	762.7	30.25	768.3	54	12.2	67	E	3	1.3		0	0			0	0	Clear	
Smithville, North Carolina	30.28	769.1	30.32	770.1	54	12.2	61	N	12	5.4		0	0			0	0	Clear	
Springfield, Massachusetts	29.98	761.5	30.11	764.8	45	7.2	68	S	3	1.3		0	0			0	0	Clear	
Stanwix, Arizona																			
Stockton, Texas					60	15.6	77	SE	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass	30.05	763.3	30.11	764.8	46	7.8	54	NW	12	5.4		0	0			0.02	0.5	Clear	
Toledo, Ohio	29.64	752.8	30.34	770.6	44	6.7	92	W	2	0.9			Fog		Calm	0	0	Foggy	
Tucson, Arizona	27.56	700.0	30.11	764.8	63	17.2	79	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.23	767.8	30.26	768.6	61	16.1	66	N	26	11.6		0	0			0	0	Clear	
Umatilla, Oregon	29.80	756.9			48	8.9	92	SE	4	1.8		5cs	0	Calm		0.03	0.8	Fair	
Vicksburg, Mississippi	30.04	763.0	30.31	769.9	53	11.7	72	E	2	0.9		0	0			0	0	Clear	
Virginia City, Montana	24.32	617.7	29.80	756.9	39	3.9	81	Calm	0	0			10s		NW	0.11	2.8	Cloudy	
Visalia, California	29.63	752.6	30.00	762.0	56	13.3	68	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	30.21	767.3	30.33	770.4	47	8.3	66	W	4	1.8		0	Sm'e			0	0	Clear	
Wickenburg, Arizona					49	9.4	100	NW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.24	768.1	30.32	770.1	53	11.7	64	N	12	5.4		0	0			0	0	Clear	
Winnemucca, Nevada	25.82	655.8	30.18	766.6	41	5.0	48	E	10	4.5		0	0			0	0	Clear	
Wood's Holl, Mass	30.09	764.3	30.15	765.8	50	10.0	58	NW	9	4.0		0	0			0.04	1.0	Clear	
Yankton, Dakota	28.91	734.3	30.24	768.1	38	3.3	86	NE	2	0.9		8cs	0	SW		0	0	Fair	
Yuma, Arizona	29.88	758.9	30.05	763.3	62	16.7	33	NE	1	0.4		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.93	760.2	29.98	761.5	21.5	—5.8	93	NW	11	4.9		3k	3s	NW	NW	0.01	0.3	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	30.03	762.7	30.05	763.3	80	26.7	67	NW	8.4	3.8		4k	4ks	NE	NE	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.15	765.8	30.16	766.1	81	27.2	87	Calm	0	0		2c	2s	NE		0	0		James Gall.
Santiago de Cuba, W. I.	30.02	762.5	30.03	762.7	84	28.9	72	N	6	2.7		1c	1s	NE	Calm	0	0		T. W. Beattie.
Navassa, W. I.	29.91	759.7	29.99	761.7	84	28.9		NE			1					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	E				0	2ks			0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.82	757.4	29.84	757.9	84	28.9	83	NE				0	5ks		NE			Hazy	L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.02	762.5	84	28.9	75	E			3	0	5k			0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.28	642.4			66.2	19.0	76	Calm			0	3cs	0			0.26	6.6	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.: m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.02	762.5	60	15.6	58	14.4	88	SW	4	1.8			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.31	769.9			63	17.2	62	NNE	8	3.6						0	0			Blue sky	
Navy Yard, Portsmouth, N.H	30.06	763.5	60	15.6	39	3.9	??	WNW	4	1.8			0			1.	25.			Clear	
Naval Hospital, Yokohama, Japan	29.63	752.6	69.5	20.8	68	20.0	67	SW			5		0			0	0			Lightning	
Adams, Montevideo, Uruguay	30.28	769.1	63	17.2	56	13.3	63	N			1		1		N	0	0	None		D. clouds	
Alert, N. 42° 16′, E. 132° 27′	29.94†	760.5†	57	13.9	57	13.9	87	N			6–7		10		N			Moderate.	N	Squally	
Alliance, Constantinople, Turkey.	30.17	766.3	69	20.6	68	20.0	79	NE			6		10		N&E					Overcast	
Ashuelot, Che-foo, China	30.22	767.6	67	19.4	61	16.1	66	NNE			2		0					Smooth		Blue sky	
Canonicus, New Orleans, La.	30.19	766.8	49	9.4	62	16.7	77	NE			2		1							Clear	
Colorado, New York, N. Y.	30.30	769.6	65	18.3	53	11.7	67	WNW	24	10.7			4		WNW	0	0			Fair	
Despatch, Beikos Bay, Bosphorus	30.17	766.3	66	18.9	65	18.3	89	ENE			4–6		10		NE			Smooth		Rainy	
Franklin, Norfolk, Va.	30.36	771.1	55	12.8	57	13.9	69	N	3	1.3			2		N	0	0			Clear	
Frolic, N. 14° 17′, W. 60° 47′	30.09	764.3	84	28.9	84	28.9	91	NE			3		4ck		Calm	Light	Light	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.75‡	755.6‡			73	22.8	95	S			0–1		9		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 6° 02′, E. 87° 00′	29.93	760.2			80	26.7	91	WSW			2		10			0.9	23.	Smooth		Raining	
Lackawana, Esquimault, B. C.	30.08	764.0			53	11.7	86	Calm			0		10					Smooth		Raining	
Marion, Smyrna, Turkey	29.97	761.2	72	22.2	72	22.2	80	W			3		10		Calm	0	0	Smooth		D. clouds	
Michigan, Lake St. Clair	29.85	758.2	74	23.3	50	10.0	79	NW			1		0							Clear	
Monocacy, Hakodadi, Japan	29.62	752.3	60	15.6	58	14.4	88	N			1		10			Light	Light	Smooth		D. clouds	
Monongahela, N. 35° 54′, W. 61° 46′	29.77	756.1	73	22.8	73	22.8	90	NNW			5–6		kn			Light	Light	Rough	N	Raining	
New Hampshire, Port Royal, S. C.	30.43	772.9			60	15.6	76	NE	30	13.4			2		NE					D. clouds	
Omaha, Valparaiso, Chili	30.08	764.0	63	17.2	58.5	14.7	85	N	1	0.4			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.07†	763.8†	70	21.1	69	20.6	85	SSE			3		10					Long	W	Misty	
Ossipee, N. 41° 15′, W. 71° 55′	30.20	767.1	66	18.9	53	11.7	80	NNW			3		1		Calm			Ground	E	D. clouds	
Palos, Shanghai, China	30.25	768.3	69	20.6	64	17.8	73	NNE			2		1		N&E	0	0			Clear	
Pensacola, Mare Island, Cal.	30.10	764.5			60	15.6	94	SSW			0–1		0			0	0			Clear	
Plymouth, Norfolk, Va.	30.11	764.8	62	16.7	59	15.0	59	NW			5		1		NW					Clear	
Ranger, Nagasaki, Japan	30.24	768.1			69	20.6	85	Calm			0		4		Calm	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.96	761.0			76	24.4	95	NNE			1		8		S					D. clouds	
Santee, Annapolis, Md.	30.35	770.9	59	15.0	52	11.1	66	NW			2					0	0			Clear	
St. Louis, League Island, Pa	30.12	765.0	53	11.7	53	11.7	73	NW	11	4.9			0			0	0			Clear	
Tennessee, Yokohama, Japan	29.60	751.8	71	21.7	67	19.4	74	SSW	15	6.7			1			0	0	Chop		Squally	
Trenton, Marseilles, France	30.11	764.8	70	21.1	67	19.4	64	NNW	5	2.2	5		4		N	0	0			D. clouds	
Vandalia, Smyrna, Turkey	30.07	763.8	76	24.4	77	25.0	73	W			2		3		W					D. clouds	
Wabash, Boston, Mass.	30.11	764.8	51	10.6	47	8.3	62	NW	5	2.2			0			0	0			Blue sky	
Wyoming, Washington, D. C.	30.88†	784.3†	57	13.9	54	12.2		N			1		10							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Yokohama, Japan.			29.84*	757.9*	68	20.0	74	S			4		0			Smooth		Blue sky	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 02′, E. 171° 40′			30.27†	768.8†	69	20.6		S			7		9		S	Smooth	SSE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 31° 55′, E. 134° 00′			30.16*	766.1*	74	23.3	??	Var.			2–3		cs		NE	Smooth	NE	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N 29° 38′ W. 155° 24′			30.07	763.8	77	25.0	69	Var.			1–3		2		S&E	Rough	NW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois, N. 40° 13′, W. 70° 33′			29.99*	761.7*	54	12.2	??	NNW			5		2		NNW	Moderate.	NE	D. clouds	Captain Shackelford.
S. S. Indiana, N. 49° 39′, W. 15° 59′			30.25†	768.3†	61	16.1		E			4		6		ENE	Heavy	SE	Clear	Captain Sargent.
S. S. Ohio, Liverpool.			30.72	780.3	57	13.9	87	S			1		10		Calm				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.25	768.3	60	15.6	76	NNE	15	6.7		0	0					Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Corrected for temperature and elevation, instrumental error not known. †Aneroid; corrected for elevation, instrumental error not known.

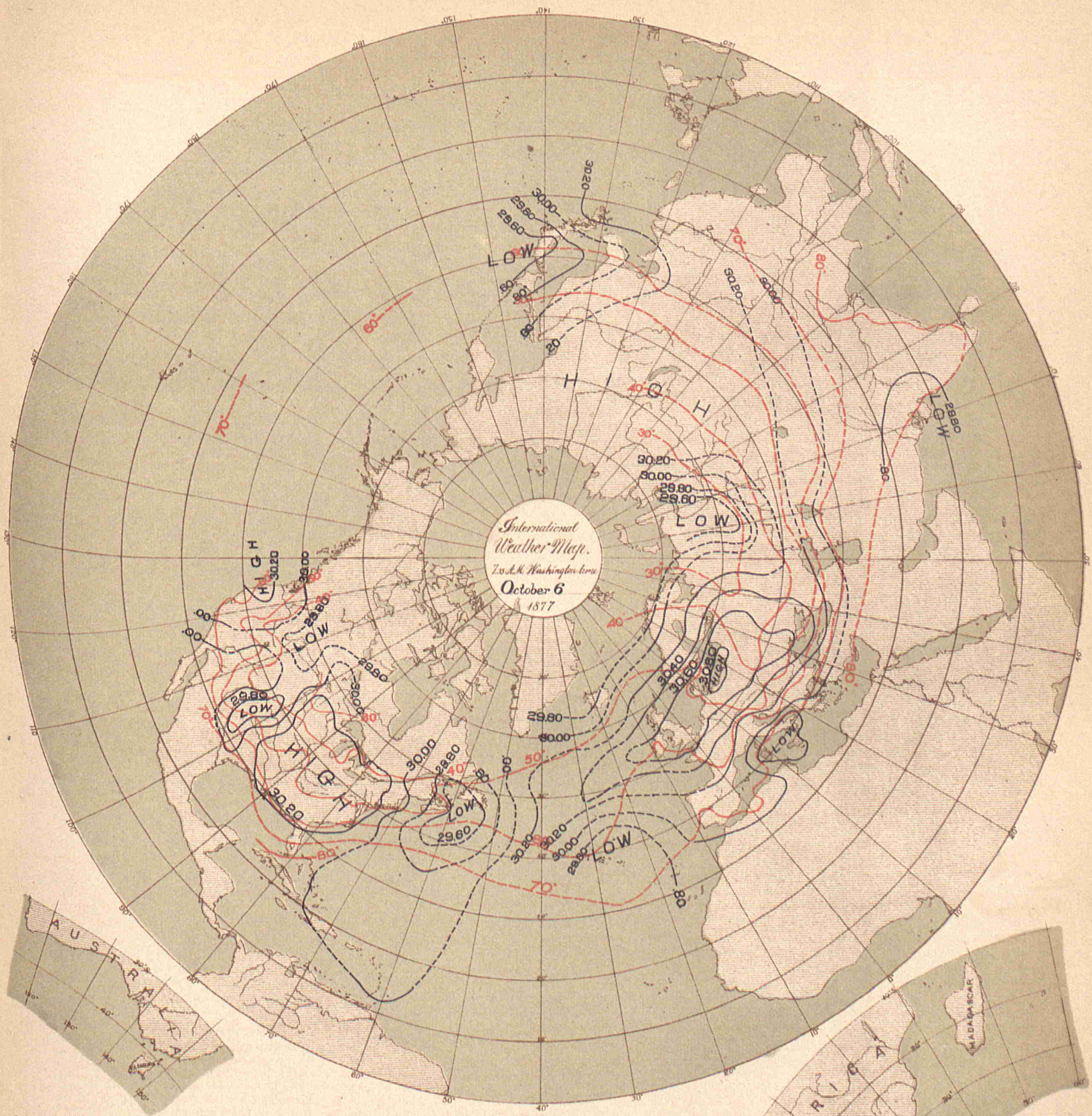
NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 7, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.10	764.4	73.8	23.2	58	NNW			1		1			0.047	1.2	Very fair	Michel.
Algiers			30.03	762.7	70.9	21.6	62	NW			1		2			0.472	12.0	Fair	Peter.
La Calle			29.92	760.0	60.8	16.0	91	W			3		9			0.472	12.0	Covered	Fleury.
Tunis			29.94	760.4	65.1	18.4	83	NW			4		10			0.413	10.5	Covered	Jacques.
Sfax			29.98	761.4	75.2	24.0		NW			4		5			0	0	Cloudy	Husson.
Saida			30.04	763.0	63.0	17.2		N			1		1			0	0	Very fair	Millot.
Tebessa			29.94	760.5				W			3		4			0	0	Cloudy	Bourgeois.
Geriville			29.98	761.6	59.7	15.4	27	NW			1		1			0	0	Very fair	Lemaillot.
Laghouat			30.02	762.6	66.2	19.0	63	W			2		0			0	0	Clear	François.
Biskra			30.04	763.0	77.5	25.3	48	Calm			0		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.67	753.6	30.24	768.1	42.6	5.9	87	NE			5		10			0.224	5.7	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.54	750.3	30.33	770.3	45.7	7.6	83	E			1		0			0	0		Dr. Wierzbiski.
Eperies	29.40	746.8	30.30	769.5	49.6	9.8	40	Calm			0		2cs			0.039	1.00		Julius Mikolik.
Gratz	29.03	737.3	30.32	770.1	44.6	7.0	86	E			3		10			0.079	2.0		Andreas Rospini.
Hermannstadt	28.84	732.4	30.29	769.3	45.9	7.7	43	SE			4		10			0	0		Prof. Reissenberger.
Kremsmünster	28.86	733.0	30.24	768.0	44.2	6.8	74	E			3		2			0	0		Prof. C. Wagner.
Lemberg	29.33	744.9	30.34	770.7	44.4	6.9	62	SE			1		0			0	0		Dr. T. Stanecki.
Pola	29.86	758.4	29.97	761.2	55.0	12.8	45	E			7		9cs			0	0		I.R. Hydrographic Office
Szathmar																			Johann Tamas, S. J.
Szegedin	29.97	761.2	30.26	768.5	46.4	8.0	81	SE			1		10			0	0		Karl Stancel.
Trieste	29.92	759.9	30.02	762.5	50.2	10.1	54	ENE			5		9			0	0		P. Busin.
Vienna	29.60	751.7	30.31	769.8	47.3	8.5	59	E			1		2			0.028	0.7		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.82	732.0	30.35	770.9	50.7	10.4	34	NE			2		1			0.083	2.1		Royal Observatory.
Brussels	30.21	767.3	30.41	772.5	50.7	10.4	58	E			2		8		N	0.063	1.60		
Furnes	30.41	772.3	30.43	772.9	53.4	11.9	70	WNW			2		10			0.35	9.	Foggy	
Maeseyck	30.28	769.1	30.41	772.4	50.2	10.1	63	NNE			2		8			0.051	1.3		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	30.16	766.1	30.26	768.6	57.0	13.9		W	22	9.8			8			0.090	2.29	Overcast	W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			30.56	776.2	59.9	15.5		W	8	3.6									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.49	774.4	55.1	12 8		W	24	10.7			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.62	777.7	56.5	13.6		W			1		9					D. clouds	J. Dreyer.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	85	29.4		NE			1		3					D. clouds	Pvt. G. W. Roberts, A
Cambridge, Observatory			30.43	772.9	53	11.7		SW			1		10					Overcast	H. Todd. [H.C.
Cardington			30.46	773.7	55.0	12.8		NW			1		9					Overcast	John McLaren.
Chatham, School M. E	30.34	770.6	30.48	774.2	52.7	11.5		W			1		0					Dense haze	Lt. W. G. Morris, R. E.
Dartmoor	28.94	735.1	30.43	772.9	54.0	12.2		N			4		5					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.48	774.2	30.51	774.9	58	14.4		WNW			3		5					D. clouds	J. Mac Gowan.
Dover	30.41	772.4	30.44	773.2	55	12.8		WNW			3		4					½ clouded	J. Costello.
Eccles, (near Manchester)			30.44	773.2	51.0	10.6		WNW	4.0	1.8			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	30.33	770.4	30.56	776.2	57.0	13.9		NNW			3		9					Overcast	The Staff.
Fort Napier, (Natal)	27.54	699.5	29.73	755.1	87.8	31.0		NE			2		4					D. clouds	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.97	761.2	85	29.4		NE			0		3					D. clouds	
Galway, Queen's College					57	13.9		ENE			4		3					D. clouds	E. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.04	763.0	30.08	764.0	69.3	20.7		E			1		2					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	30.25	768.3	30.46	773.7	54.1	12.3		WSW			4		7					D. clouds	D. G. Maclean.
Great Yarmouth	30.42	772.7	30.42	772.7	52	11.1		WNW			2		4					Foggy	G. T. Watson.
Greenwich, Royal Obs'y	30.30	769.6	30.47	773.9	50.1	10.1		WSW			1		10					Misty	The Staff, for G. B. Airy.
Guernsey	30.28	769.1	30.50	774.7	58.5	14.7		NNW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.55	776.0	59	15.0		N			4		3			0	0	D. clouds	M. P. Moyle.
Holyhead	30.46	773.7	30.51	774.9	57	13.9		NW			4		3					D. clouds	John Tilston.
Jersey	30.22	767.6	30.51	774.9	58.0	14.4		NNE			3		10					Overcast	J. Fisher.
Kew, Observatory			30.49	774.4	49.0	9.4		E	3	1.3			10					Hazy	The Staff.
Kingstown	30.56	776.2	30.59	777.0	56	13.3		NW			4		8					Overcast	George Mitchell.
Leicester, Museum			30.39	771.9	54.3	12.4		N			4		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.75	755.6	29.83	757.7	72.2	22.3		NW			2		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	30.21	767.3	30.30	769.6	55	12.8		WNW			3		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	75.0	23.9		NE			6		10			Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	30.25	768.3	30.44	773.2	57.7	14.3		WNW			3		10k;d		NW	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.94	760.5	30.47	773.9	53.2	11.8		WSW			2		10					Foggy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.46	773.7	55	12.8		N			1		10					Gloomy	F. Lucas
Plymouth	30.46	773.7	30.53	775.4	58.0	14.4		Calm			0		10					Overcast	John Merrifield.
Roche's Point	30.59	777.0	30.64	778.2															W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			30.17	766.3	53	11.7		WNW	39	17.4			10					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.03	762.7	59.8	15.4		ENE			2		10					Drizzling	Sergt. W. H. Lyne.
Sheffield	30.17	766.3	30.41	772.4	56.6	13.7		NW			6		9			0.02	0.5	Overcast	W. F. Cooper.
Silloth Rectory	30.41	772.4	30.44	773.2	62.7	17.1	64	SW			2		4			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					54.1	12.3		W			1		7					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			30.31	769.9	54	12.2		WNW			6		10					Raining	John Smith.
Stratfield Turgiss	30.27	768.8	30.49	774.4	54.3	12.4		E			1		10					Overcast	Rev. C. H. Griffith, F.M.S.
Thurso			30.20	767.1	53	11.7		WNW			6		10					Gloomy	John Trotter.
Truro, Royal Institution			30.58	776.7	60	15.6		N			4		7					Gloomy	W. Newcombe.
Valencia, Observatory			30.63	778.0	58.8	14.9		NNW	11	4.9			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					55	12.8		NW			3		5			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.83	757.7	29.87	758.7	62.2	16.8	96	NW	14	6.3		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.32	770.1	46.0	7.8	81	SE			2		0			0	0		Francis Abbott, F.R.A.S
Leith, Restalrig Park			30.37	771.4	55.0	12.8		W			3	10cs				0.07	1.8	Overcast	Andrew Gibb.
Mauritius, Observatory	30.07	763.8	30.26	768.6	73.2	22.9	55	ESE	18.0	8.0		0	8		E	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	30.09	764.3	30.19	766.8	60.2	15.7	86	NE	1	0.4			6			0	0	Sultry	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.42	772.7	54	12.2		NW			7		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.97	761.2	50	10.0		NW			7		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria				Capt. W. Watson.
S. S. Batavia, N. 42° 35′, W. 66° 35′	3	NW	Blue sky	Capt. J. E. Moulard.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. O. Prehn.
S. S. Seine, N. 51° 23′, W. 34° 30′	0		Rain and fog	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller, N. 47° 40′, W. 40° 20′	6	E.	Hazy	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2			68.0	20.0	91	SE			2	2cs	1d	E	NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is approximately measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.04	763.1	30.09	764.3	48.0	8.9	76	SW			6		10						
Fanöe	30.13	765.2	30.15	765.7	58.8	12.1	89	WSW			6		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.15	765.9	30.20	767.0	45.5	7.5	74	W			4		8						
Thorshavn, (Faröe)	29.69	754.0	29.72	754.9	50.5	10.3	54	NW			6		3						
Vestervig	29.74	755.4	29.91	759.7	50.7	10.4	96	SW			6		10					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.98	761.4	30.53	775.4	60.8	16	34	NE			4		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	30.25	768.3	30.36	771.2	55.4	13.0	64	NW			3		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	29.97	761.3	30.05	763.3	50.5	10.3	56	N			8		5		S	0.04	1.	Cloudy	Mr. Giraud, Director.
†Bar-sur-Seine																0	0		C. Saillard.
Beaumette Obs'y (Angers)	30.21	767.3	30.37	771.5	59.9	15.5	31	NE	8.1	3.6					E	0	0		Albert Cheux.
Beauvais	30.13	765.4	30.41	772.5	54.1	12.3	44	NW			2		8			0	0	Very cloudy	Normal School.
Besançon	29.38	746.2	30.29	769.4	47.5	8.6	64	ENE			4		2		E	6	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.34	745.2	30.26	768.5	49.5	9.7	52	N			6	2c		N		0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.76	755.9	30.32	770.1	53.6	12	56	N			4		0			0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	30.21	767.3	30.43	772.8	61.0	16.1	61	NNE			4		6k		NNE	0	0		The Staff.
Carcassonne, Normal School	29.77	756.1	30.18	766.6	56.5	13.6	42	W			4		1		W	0	0	Clear	Vateau, Director.
Caen	30.39	772.0	30.47	774.0	57.6	14.2	61	SSE			4		2		S	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	29.78	756.3	30.34	770.7	58.6	14.8	58	N			2		5		SW	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.07	763.8	30.39	772.0	55.8	13.2	60	NE			3		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.85	732.8	30.22	767.6	53.6	12.0	40	NE			2		0			0	0	Clear	Allnard, Director.
Commercy, Normal School	29.45	747.9	30.34	770.7	49.3	9.6	76	N			4		0			0	0	Clear	Dr. Goulet, Director.
Commune de Gréasque*	28.88	733.5	30.02	762.5	46.9	8.3	58	NW			2		2		NW			¾ clouded	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.18	766.6	30.39	772.0	57.9	14.4	61	NE			4		1		N	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	30.13	765.2	30.45	773.3	52.5	11.4	56	NNE			2		2		NE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.31	744.4	30.24	768.0	47.7	8.7	52	NNE			6		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.42	772.7	30.52	775.2	63.7	17.6	49	NNE			3		0			0	0	Clear	T. Carré, Director.
Mâcon, Normal School	29.54	750.3	30.26	768.5	55.8	13.2	72	NNE			6		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.21	741.9	30.29	769.4	43.0	6.1	83	NNE			6		1		NE	0	0	Clear	Normal School.
Nismes, Normal School	29.97	761.3	30.18	766.5	61.7	16.5	78	N			6		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.88	758.9	30.26	768.6	55.0	12.8	29	NE			6		2			0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	30.16	766.0	30.40	772.1	54.3	12.4	29	N			1	1c				0	0	Clear	National Observatory.
Privas	29.02	737.2	30.09	764.2	56.5	13.6	74	N			4		2		N	0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.38	771.6	30.41	772.4	59.4	15.2	35	NE			4		0			0	0	Clear	Lt. Decaute, Director.
Rouen, Normal School	30.37	771.5	30.46	773.7	57.9	14.4	37	NNW			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	29.24	742.8	30.33	770.4	57.2	14	24	W			4		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.46	748.2	30.18	766.6	51.1	10.6	57	N			6		2		NE	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	81.3	27.4										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			29.97	761.2	50.4	10.2	93	ENE			2		10			0.276	7.00	Raining	The Staff.
Mont-Louis	24.93	633.1	30.24	768.1	46.0	7.8	5	NNE	11.2	5.00			4		E	0	0		Mr. Falgnère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.11	764.8	30.39	771.8	54.5	12.5	40	N			2		ck		ENE	0	0		Marié Davy, Director.
Perpignan			30.10	764.6	59.2	15.1	20	N	29.8	13.33			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.38	543.0			33.8	1.0		NE			4		4					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.62	574.5			34.7	1.5		NE			6–8		4			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.23	767.7	30.39	771.9	55.9	13.3	37	N			2		0			0	0		E. Renou.
Toulouse, Observatory	29.55	750.5	30.28	769.0	56.7	13.7	25	NNW			6		1			0	0		The Staff.
Tours	30.18	766.6	30.38	771.6	56.8	13.8	29	N			2		1		NNW	0	0		C. Marquet.
Versailles, (near Paris)			30.40	772.2	55.8	13.2	35	NE			3		5			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.20	767.0	30.23	767.7	59.5	15.3	77	ENE	5.8	2.6			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône. † Observation not simultaneous.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.16	766.1	30.33	770.4	46.8	8.2	47	SE			2		2			0	0		Prof. Arndt.
Breslau	29.81	757.2	30.35	770.8	42.1	5.6	62	ESE			2		0			0	0		Royal University Obs'y.
Carlsruhe	29.87	758.7	30.31	769.8	49.6	9.8	61	NE			1		0			0	0		Albert Senz.
Cassel	29.78	756.4	30.39	772.0	52.5	11.4	42	NNE			2		1	NE		0	0		Dr. H. Möhl.
Crefeld	30.21	767.2	30.37	771.4	51.8	11.0	52	SE			2		9			0	0		Director Lose.
Emden	30.32	770.1	30.35	771.0	50.4	10.2	76	W			2		10			0	0		Prof. Prestel.
Frankfort on the Main	29.98	761.5	30.35	771.0	52.2	11.2	27	N			3		1			0	0		Physical Society.
Friedrichshafen	28.82	732.0	30.31	769.9	40.1	4.5	76	NE			7		10	NE		0.488	12.4	Raining	M. Wilhelm.
Hamburg	30.26	768.5	30.33	770.3	48.0	8.9	63	WSW			3		10ks			0	0	Cloudy	Captain F. Hegemann.
Kiel	30.21	767.4	30.23	767.8	47.7	8.7	63	SW			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.29	769.4	30.36	771.1	46.8	8.2	48	SW										Clear	Prof. E. Luther.
Köslin			30.25	768.3	46.4	8.0		SW			4		1			0.370	9.4		H. Müller.
Leipsic, Observatory	29.96	760.9	30.39	772.0	41.7	5.4	63	W			1		0			0	0		Prof. Bruhns.
Memel, Naval School	30.16	766.0	30.21	767.2	46.9	8.3	60	SW			7–8		3ck						Reinbrechtvon Skalweit.
Neufahrwasser	30.26	768.7	30.28	769.1	49.5	9.7	47	SSW			4		5			0	0		A. Lothes.
Posen	30.06	763.5	30.36	771.1	45.5	7.5	60	SSE			2		0					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.76	755.8	30.32	770.1	48.9	9.4	54	NE			4		0			0	0		Dr. Schur.
Stuttgart	29.33	744.9	30.29	769.4	46.4	8.0	65	E			0		0			0	0		Prof. Schoder.
Treves, (Trier)	29.70	754.4	30.23	767.8	51.8	11.0	41	NE			5		4			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.76	730.4	30.28	769.1	49.1	9.5	50	NNE			2		1			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.37	771.4	30.41	772.4	46.4	8.0	59	SW			5		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.50	749.4	29.89	759.1	74.1	23.4		SW										½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.79	756.6	29.84	757.8	86.0	30.0	59	WSW	30.0?	13.4?			1			0	0	D. clouds	
Deesa	29.37	746.0	29.85	758.1	81.5	27.5	67	N					0			0.54	13.7	Blue sky	
Bombay	29.77	756.2	29.81	757.2	78.6	25.9	94	SSW	7.0	3.1			10	S	SSW	0.25	6.3	Overcast	
Poona	27.78	705.6	29.78	756.5	76.4	24.7	84	W					10	SW	W	0.06	1.5	Raining	
Lahore	29.13	739.8	29.87	758.7	81.0	27.2	58	SE	1.0	0.8			3			0	0	D. clouds	
Belgaum	27.34	694.3	29.90	759.5	70.8	21.6	92	Calm					10		W	0.62	15.7	Overcast	
Bangalore																			
Roorkee	29.01	736.9	29.93	760.3	69.8	21.0	92	SE	3.3	1.5			10			0.14	3.6		
Agra	29.22	742.2	29.79	756.8	71.8	22.1	90	E					10	E	E	0	0		
Trichinopoly																			
Nagpur	28.80	731.4	29.84	758.0	79.6	26.4	81	SE	5.1	2.3			7			0.47	11.9	D. clouds	
Madras																			
Lucknow	29.53	750.0	29.91	759.7	70.5	21.4	95	E	7.3	3.3			10		E	0	0	Drizzling	
Allahabad	29.58	751.4	29.90	759.4	73.7	23.2	95	E	3.9	1.7			10		ENE	1.58	40.1	Overcast	
Patna	29.77	756.2	29.96	760.9	75.3	24.1	86	E	0.9	0.4			10	E	E	2.06	52.3	Overcast	
Hazaribagh	27.90	708.7	29.94	760.4	73.3	22.9	87	NE	7.2	3.2			10			0.01	0.3	Drizzling	
Cuttack	29.85	758.1	29.93	760.2	81.0	27.2	80	SSW	0.1	0.0			2			0	0	D. clouds	
Calcutta (Alipore)	29.94	760.4	29.96	761.0	77.7	25.4	91	S	3.0	1.3			2			0	0	D. clouds	
Goalpara	29.54	750.2	29.92	760.1	80.8	27.1	79	Calm	0.3	0.1			10			0	0	Overcast	
Chittagong	29.86	758.5	29.95	760.8	81.0	27.7	89	ESE	1.3	0.6			3			0	0	Blue sky	
Sibsagar	29.61	752.1	29.95	760.7	77.9	25.5	89	ENE	1.5	0.7			10			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.49	723.7	29.86	758.5	78.8	26.0	83	SE	5.1	2.3			8	SE	SE	0.06	1.5	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r —10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.18	563.4	30.05	763.2	30.2	— 1.0	92	NE			8		7	NE		0	0		Ab. Dom. Morgini.
Stelvio	22.17	563.0	30.05	763.3	34.2	1.2		ENE			2		7	WSW		0	0		Signora Ernesta Manfredi.
Udine	29.63	752.7	30.04	763.1	55.8	13.2	39	E	11.2	5.0			7			0	0		Prof. Giovanni Clodig.
Padua	29.93	760.3	30.04	763.1	56.5	13.6	42	NE	17.4	7.8			10			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.86	758.5	30.06	763.4	56.7	13.7	43	NE	2.5	1.1			9			0	0		Conte Alm. Da Schio.
Verona	29.80	757.0	30.02	762.6	63.7	17.6	42	E	9.8	4.4			10			0	0		Dott. B. Bertoncelli.
Bergamo	28.73	729.8	30.04	763.1	55.8	13.2	58	SSW			1		9			0.126	3.2		Prof. Trionfini Carlo.
Domodossola	28.98	736.2	30.01	762.3	57.2	14.0	59	S			6		0			0	0		Prof. Giuseppe Calza
Milan	29.56	750.7	30.08	763.9	59.2	15.1	53	SW			2		8	W		0.028	0.7		Ab. Gio. Capelli.
Pavia	29.73	755.1	30.08	763.9	55.8	13.2	46	NE			2		9			0	0		Prof. Gio. Cantoni.
Moncalieri	29.17	741.0	30.08	764.1	54.1	12.3	87	NW	0	0			9	E		0.362	9.2		Prof. P. F. Denza.
Mondovi	28.17	715.4	30.08	764.1	46.2	7.9	72	W			4		10			0.224	5.7		Prof. D. C. Bruno.
Porto Maurizio	29.75	755.7	29.97	761.3	61.7	16.5	29	NE			6		4	SE		0	0		Prof. L. Vassallo.
Genoa	29.80	756.9	29.97	761.2	64.0	17.8	28	NE	8.1	3.6			4	SW		0	0		Prof. G. M. Garibaldi
Placenza	29.82	757.5	30.08	764.0	55.6	13.1	42	E	6.9	3.1			10			0	0		Dott. G. Manzi.
Parma	29.80	756.9	30.11	764.8	60.8	16.0	57	ENE			4		10			0	0		Prof. P. Pigorini.
Florence	29.72	754.9	29.98	761.4	58.1	14.5	53	NE			6		9	NE		0	0		Cav. F. Meucci.
Leghorn	29.82	757.5	29.91	759.6	62.6	17.0	36	NE	12.5	5.6			4			0	0		Prof. P. Monte.
Siena	28.68	728.4	29.88	759.0	57.6	14.2	58	ENE	9.4	4.2			8	E		0	0		Prof. L. Toscani.
Urbino	28.43	722.1	29.99	761.8	48.2	9.0	82	NNE			4		10			0.252	6.4		Prof. P. Serpieri.
Pesaro	29.95	760.6	29.99	761.8	56.5	13.6	64	NE	62.2	27.8			10	NE		0	0		Prof. Luigi Guidi.
Ancona	29.82	757.5	29.93	760.2	61.9	16.6	62	NE			6		10			0	0		Prof. F. DeBosis.
Grosseto	29.78	756.3	29.89	759.1	62.6	17.0	48	NNE			6		8	SE		0	0		Avv. P. Ponticelli.
Rome	29.61	752.0	29.78	756.4	66.4	19.1	44	N	16.8	7.5			9			0	0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.55	750.6	29.75	755.6	69.1	20.6	53	E			4		8	W		0	0		Prof. L. Palmieri.
Lecce	29.36	745.8	29.61	752.1	70.9	21.6	67	SSW	8.7	3.9			7			2.390	60.7		Prof. C. De Giorgi.
Cosenza	28.89	733.8	29.76	756.0	64.4	18.0	90	S	3.8	1.7			8			2.000	50.8		Prof. F. D. Conti.
Cagliari	29.60	751.7	29.78	756.5	68.0	20.0	47	N			4		5	W		0.315	8.0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.58	751.3	29.63	752.5	72.3	22.4	70	NE			6		10	S		0.039	1.0		Prof. F. Caflero.
Palermo	29.48	748.7	29.72	755.0	63.1	17.3	86	WSW	2.6	1.1			10			1.228	31.2		Prof. G. Cacciatore.
Caltanissetta	27.82	706.6	29.73	755.2	61.2	16.2	85	W			4		10			0.193	4.9		Prof. A. Pagani.
Syracuse	29.63	752.7	29.71	754.6	70.5	21.4	65	WSW			6		10	W		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.22	742.2	29.78	756.3	65.3	18.5	60	WNW	3.8	1.7			8			0.240	6.1		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,1[illegible].3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.81	757.2	29.91	759.7	59	15.0	65	WNW	3	1.3			5s			0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guannajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.18	588.8	30.25	768.3	54.5	12.5	61	NW	0.5	0.20		0	0			0	0	Blue sky	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guannajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.44	773.2	30.44	773.2	54.7	12.6		W			2					0	0		
Groningen	30.30	769.5	30.35	770.9	51.3	10.7		W			2					0	0		
Helder	30.37	771.3	30.37	771.3	53.1	11.7		WSW			2					0.071	1.8		
Hellevoetsluis			30.41	772.3	57.4	14.1	72	W			3								
Utrecht	30.35	771.0	30.40	772.2	52.2	11.2	64	SSE			1		8			0	0	Very cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.76	755.9	29.82	757.3	47.1	8.4	76	NW	22.4	10.0			10			0.331	8.4	Raining	
Brönö	29.15	740.5	29.19	741.5	45.3	7.4	86	W	27	12			10					Light rain	
Christiania	29.38	746.3	29.53	750.0	54.9	12.7	50	SW	7	3			10			0.004	0.1		
Tromsö	28.93	734.8	28.97	735.9	44.2	6.8	77	SW	4	2			10			0.504	12.8	Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.86	758.4	30.05	763.2	65.8	18.8	88	S	3.1	1.4			5			0.197	5.0		Dr. J. A. Sampaio
Campo Major	29.17	741.0	30.18	766.6	70.2	21.2	32	NE	7.4	3.3			2			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.09	764.2	30.16	766.0	73.9	23.3	82	ESE	6.3	2.8			10			0.248	6.3		Capt. D. A. de Cunha.
Lisbon, Observatory	29.83	757.7	30.19	766.7	67.8	19.9	43	NE	12.5	5.6			2	NW		0	0		The Staff.
Ponta Delgada, (Azores)	30.02	762.5	30.09	764.3	72.0	22.2	79	S	6.3	2.8			4			0.142	3.6		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell: Height scale 0-9	Sea or swell: Direction from—	Observer.
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.90	759.5	30.34	770.5	47.1	8.4	44	SSE	9	4			0						Astronomical Obs.
Wilna	29.85	758.2	30.28	769.2	45.9	7.7	52	S	13	6			6						Astronomical Obs.
Dorpat	29.63	752.5	29.87	758.8	45.3	7.4	76	SW	13	6			10						Physical Cabinet.
St. Petersburg	29.67	753.6	29.69	754.0	45.1	7.3	89	SW	15	7			10					Light rain	Central Physical Obs.
Kuopio	29.00	736.7	29.32	744.8	43.5	6.4	100	SW	18	8			10					Raining	Ch. Forsten.
Kieff	29.76	756.0	30.43	772.8	43.0	6.1	60	WNW	4	2			0						Physical Cabinet.
Nikolaiev	30.47	773.8	30.54	775.6	44.2	6.8	57	NE	4	2			0						Kurdakof.
Kertch	30.37	771.4	30.39	771.9	48.7	9.3	70	NNE	11	5			3						Lagorio.
Moscow	29.49	749.1	30.06	763.4	38.1	3.4	73	S	13	6			10						Meteorological Obs.
Lugan	30.19	766.9	30.41	772.3	41.5	5.3	54	WSW	9	4			2						Meteorological Obs.
Archangel	29.37	746.0	29.39	746.5	37.0	2.8	96	S	13	6			10					Raining	Ogorodnikof.
Tiflis	28.74	730.0	30.14	765.6	64.2	17.9	54	N	18	8			6						Physical Observatory.
Astrakhan	30.46	773.7	30.38	771.6	44.1	6.7	38	NW	7	3			4						Sebastianof.
Kasan	29.60	751.8	29.88	758.9	33.1	0.6	64	WSW	7	3			3						Physical Cabinet.
Orenburg	29.84	758.0	30.22	767.5	51.8	11.0		E	13	6			0						Tschernischef.
Ekaterinburg	28.43	722.2	29.41	747.0	26.1	— 3.3	78	WSW	22	10			10						Meteorological Obs.
Nukuss	29.85	758.2	30.09	764.2	46.8	8.2	92	N	18	8			10						
Kasaly																			Bobrof.
Tashkend	28.35	720.1	30.04	762.9	59.9	15.5	35	Calm	0	0			0						Michelson.
Barnaul	29.46	748.3	29.98	761.4	55.2	12.9	47	NE	0	0			10						Meteorological Obs.
Yeniseisk	30.16	766.1	30.31	769.8	30.4	— 0.9	88	Calm	0	0			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.92	760.0	30.07	763.7	63.0	17.2	42	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					41.4	5.2	77	E	2	1			7						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.95	709.9	30.14	765.6	67.6	19.8	38	N	2.2	1.00		2	2	NE		0	0	Clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.97	761.3	30.05	763.4	80.1	26.7	72	NE	8.3	3.7		0	2k		NE	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.02	762.4	30.11	764.9	72.5	22.5	56	WNW	11.7	5.25		0	3		E	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.70	754.4	82.0	27.8	91	SE	0	0		5k	1k	E	E	0	0	Clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.05	737.8	29.09	738.8	42.8	6.0	.....	SW	.....	.....	4	.....	5	.....	.....	0.197	5.0	.....	
Umea	29.17	740.9	29.22	742.2	50.7	10.4	58	NW	.....	.....	6	.....	2	.....	.....	0.051	1.3	Raining	
Hernosand	29.29	744.0	29.34	745.3	50.4	10.2	70	W	.....	.....	7	.....	5	.....	.....	0.047	1.2	Raining	
Stockholm	29.38	746.3	29.56	750.8	51.8	11.0	87	WSW	.....	.....	6	.....	10	.....	.....	0	0	.....	
Wisby	29.86	758.5	29.92	760.0	46.0	7.8	89	SW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.45	748.1	29.53	750.0	49.8	9.9	90	WSW	13.2	5.9	.....	.....	10	.....	W	0.131	3.32	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.78	730.9	30.23	767.9	44.2	6.8	61	NE	.....	.....	4	.....	9	.....	.....	0	0	Covered	The Observatory.
Zurich	28.63	727.3	30.32	770.2	39.2	4.0	80	E	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +4.6 mm; Thermometer, —7.7 cent.; Relative Humidity, —8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople	.....	.....	30.08	764.1	59.7	15.4	80	NE	27	12.0	.....	.....	10	.....	NE	0.173	4.4	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.97	761.3	63.3	17.4	.....	NE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	B. Stefanidès.
Valona	.....	.....	29.81	757.2	68.0	20.0	.....	SE	.....	.....	1	.....	10	.....	.....	1.22	31.	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.93	760.2	29.95	760.6	86.0	30.0	59	NE	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.47	773.9	50	10.0	.....	S	1	0.4	.....	0	2s	.....	S	0	0	Fair	W. R. Bigg.
*Chatham, N. B.	.....	.....	30.34	770.6	36	2.2	68	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.32	770.1	45	7.2	58	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	30.16	766.1	30.36	771.1	44.3	6.8	86	SW	.....	.....	1	0	1s	.....	.....	0	0	Bright	James Smith, M. A.
Dalhousie, N. B.	30.21	767 3	.....	.....	.....	.....	.....	W	.....	.....	1	.....	.....	.....	.....	0	0	.....	H. A. Johnson.
Esquimault, B. C.	29.98	761.5	30.03	762.7	54.2	12.3	100	W	.....	.....	.....	1cs	0	.....	.....	0.16	4.1	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.40	772.1	38	3.3	76	SW	16	7.2	.....	2cs	2ks	W	Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.36	771.1	30.42	772.7	38.4	3.6	78	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.02	762.5	42	5.6	100	SW	4	1.8	.....	5k	5ks	SW	SW	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.56	750.8	30.37	771.4	47.4	8.6	76	SE	.....	.....	2	10k	0	.....	.....	0	0	Dull	H. J. Strang, M. A.
Granton, Ontario	29.25	742.9	30.37	771.4	41	5.0	91	SE	.....	.....	1	1k	0	W	.....	0	0	Clear	James Grant.
*Halifax, N. S.	30.17	766.3	30.31	769.9	43	6.1	68	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	30.06	763.5	30.44	773.2	43.9	6.6	52	W	.....	.....	2	4c	0	W	.....	0	0	Hazy	Geo. Dickson, M. A
Heart's Content, N. F.	29.90	759.4	29.98	760 2	45	7.2	92	NE	.....	.....	5	.....	10n	.....	.....	2.10	53.3	Misty	E. Weedon.
*Kingston, Ontario	30.11	764.8	30.49	774.4	46	7.8	89	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A
*Montreal, Quebec	30.24	768.1	30.44	773.2	45	7.2	86	NW	6	2.7	.....	0	2ks	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.70	754.4	30.41	772.4	40	4.4	95	SE	5	2.2	.....	2cs	0	W	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.64	752.8	30.42	772.7	37.2	2.9	95	Calm	.....	.....	0	0	0	.....	.....	0	0	Smoky	J. F. Jeffers, B. A.
Port Dover, Ontario	29.69	754.1	30.41	772.4	39	3.9	82	N	4	1.8	.....	5k	0	S	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.70	754.4	30.35	770.9	45	7.2	61	SE	12	5.4	.....	.....	10ks	.....	SW	0	0	Cloudy	M. Payne.
*Quebec, Quebec	30.11	764.8	30.44	773.2	43	6.1	67	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.95	760.7	30.43	772.9	40	4.4	98	SE	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. John, N. B.	30.23	767.8	30.40	772.1	40	4.4	91	NW	7	3.1	.....	0	0	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.63	752.6	30.35	770.9	42	5.6	76	SE	7	3.1	.....	10cs	0	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	29.06	738.1	30.40	772.1	37	2.8	80	SE	5	2.2	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	30.20	767.1	30.23	767.8	47	8.3	57	NW	13	5.8	.....	0	0	.....	.....	0.19	4.8	Clear	T. C. Hill.
*Toronto, Ontario	30.04	763.0	30.44	773.2	42	5.6	70	N	4	1.8	.....	Haze	2s	Calm	Calm	0	0	Fair	Magnetic Observatory.
Windsor, N. S.	30.23	767.8	30.33	770.4	44.0	6.7	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	45.0	7.2	100	NW	.....	.....	.....	.....	10n	.....	.....	0.66	16.8	Light rain	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Albany, New York	30.27	768.8	30.51	774.9	41	5.0	91	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Alpena, Michigan	29.64	752.8	30.32	770.1	37	2.8	80	W	2	0.9	.....	.....	10s	.....	W	0	0	Cloudy	
Atlantic City, New Jersey	30.46	773.7	30.48	774.2	50	10.0	64	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.20	767.1	30.38	771.6	53	11.7	67	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Baltimore, Maryland	30.45	773.4	30.50	774.7	47	8.3	69	N	2	0.9	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.45	773.4	30.47	773.9	51	10.6	72	N	14	6.3	.....	2k	0	N	.....	0	0	Clear	
Bismarck, Dakota	28.17	715.5	29.88	758.9	34	1.1	79	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.40	696.0	30.07	763.8	44	6.7	84	S	1	0.4	.....	2k	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	30.30	769.6	30.46	773.7	42	5.6	58	W	3	1.3	.....	0	Haze	.....	.....	0	0	Clear	
Brackettville, Texas	28.80	731.5	29.78	756.4	75	23.9	78	Calm	0	0	.....	10k	0	SE	.....	0	0	Cloudy	
Breckenridge, Minnesota	28.92	734.6	29.93	760.2	40	4.4	100	NW	6	2.7	.....	.....	Fog	.....	Calm	0.32	8.1	Foggy	
Brownsville, Texas	29.93	760.2	30.00	762.0	78	25.6	77	SE	9	4.0	.....	5c	0	Calm	.....	0	0	Fair	
Buffalo, New York	29.70	754.4	30.44	773.2	40	4.4	91	NE	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Burlington, Vermont	30.13	765.3	30.40	772.1	46	7.8	68	Calm	0	0	.....	2c	0	Calm	.....	0	0	Fair	
Cairo, Illinois	29.76	755.9	30.15	765.8	56	13.3	62	SE	8	3.6	.....	10k	0	S	.....	0	0	Cloudy	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.93	684.0	30.42	772.7	52	11.1	53	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Campo, California	27.48	698.0	30.05	763.3	44	6.7	75	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.32	770.1	30.33	770.4	61	16.1	55	NE	14	6.3	.....	2k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.42	772.7	30.45	773.4	59	15.0	87	NE	20	8.9	.....	0	5s	.....	N	0	0	Fair	
Cape Lookout, N. Carolina	30.37	771.4	30.38	771.6	62	16.7	67	NE	20	8.9	.....	2k	0	NE	.....	0	0	Fair	
Cape May, New Jersey	30.45	773.4	30.48	774.2	50	10.0	38	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.29	769.4	30.36	771.1	60	15.6	65	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.16	613.6	30.10	764.5	36	2.2	71	N	8	3.6	.....	0	0	.....	.....	0.10	2.5	Clear	
Chicago, Illinois	29.50	749.3	30.19	766.8	53	11.7	67	S	5	2.2	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Cincinnati, Ohio	29.58	751.3	30.23	767.8	51	10.6	65	SE	2	0.9	.....	0	9ks	.....	W	0	0	Cloudy	
Cleveland, Ohio	29.65	753.1	30.40	772.1	43	6.1	66	E	10	4.5	.....	.....	10s	.....	E	0	0	Cloudy	
Concho, Texas	28.10	713.7	29.96	761.0	63	17.2	83	NE	18	8.0	.....	8cs	.....	NE	.....	0.05	1.3	Cloudy	
Corsicana, Texas	29.55	750.6	30.01	762.2	61	16.1	89	N	16	7.2	.....	.....	10n	.....	Calm	0.81	20.6	Thunder-storm	
Davenport, Iowa	29.48	748.8	30.12	765.0	51	10.6	86	SE	12	5.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Threatening	
Denison, Texas	29.12	739.6	29.90	759.4	59	15.0	100	S	10	4.5	.....	.....	10ks	.....	W	2.02	51.3	Threatening	
Denver, Colorado	24.94	633.5	30.16	766.1	38	3.3	55	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.62	752.3	30.32	770.1	43	6.1	84	W	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dodge City, Kansas	27.44	697.0	29.77	756.1	43	6.1	83	N	12	5.4	.....	0	2s	.....	N	0	0	Clear	
Dubuque, Iowa	29.41	747.0	30.11	764.8	50	10.0	86	SE	7	3.1	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Duluth, Minnesota	29.34	745.2	30.03	762.7	46	7.8	92	SE	2	0.9	.....	.....	10n	.....	SE	0.30	7.6	Light rain	
Eagle Pass, Texas	29.16	740.7	29.87	758.7	71	21.7	80	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Eastport, Maine	30.33	770.4	30.40	772.1	44	6.7	67	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.65	753.1	30.38	771.6	47	8.3	69	S	15	6.7	.....	2c	Haze	.....	.....	0	0	Fair	
Escanaba, Michigan	29.54	750.3	30.21	767.3	42	5.6	83	NW	3	1.3	.....	.....	10n	.....	Calm	0.04	1.0	Light rain	
Florence, Arizona	28.48	723.4	30.08	764.0	71	21.7	49	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Fort Bayard, New Mexico	24.19	614.4	30.19	766.8	51	10.6	27	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.70	652.8	.....	.....	41	5.0	65	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter.	29.38	746.2	29.91	759.7	55	12.8	93	SW	4	1.8	.....	.....	10s	.....	Calm	0.71	18.0	Cloudy	
Fort Griffin, Texas	28.78	731.0	30.03	762.7	60	15.6	94	NW	8	3.6	.....	0	8ks	.....	NW	0.50	12.7	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.77	730.7	29.87	758.7	58	14.4	93	NW	5	2.2	.....	.....	10s	.....	NW	0.90	22.9	Cloudy	
Fort Sully, Dakota	28.35	720.1	30.05	763.3	37	2.8	80	NW	3	1.3	.....	0	0	.....	.....	0.04	1.0	Clear	
Galveston, Texas	29.97	761.2	30.01	762.2	78	25.6	90	S	12	5.4	.....	5ck	2ks	W	S	0	0	Cloudy	
Grand Haven, Michigan	29.57	751.1	30.23	767.8	48	8.9	89	S	9	4.0	.....	.....	10n	.....	S	Inap.	Inap.	Light rain	
Indianapolis, Indiana	29.43	747.5	30.22	767.6	53	11.7	66	E	5	2.2	.....	0	8s	.....	SW	0	0	Cloudy	
Indianola, Texas	29.98	761.5	30.01	762.2	78	25.6	86	S	16	7.2	.....	5c	5ks	W	S	0	0	Cloudy	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.21	767.3	30.23	767.8	64	17.8	83	NW	10	4.5	.....	8k	0	NE	.....	0.02	0.5	Clearing	
Keokuk, Iowa	29.44	747.8	30.06	763.5	50	10.0	100	SE	12	5.4	.....	.....	10n	.....	Calm	0.12	3.0	Light rain	
Key West, Florida	30.02	762.5	30.05	763.3	77.6	25.3	79	NE	16	7.2	.....	2cs	5sd	E	NE	0.01	0.3	Cloudy	
Kittyhawk, North Carolina	30.42	772.7	30.44	773.2	60	15.6	62	NE	16	7.2	.....	2k	0	NE	.....	0	0	Fair	
Knoxville, Tennessee	29.30	744.2	30.34	770.6	43	6.1	83	Calm	0	0	.....	6c	0	W	.....	0	0	Cloudy	
La Crosse, Wisconsin	29.33	745.0	30.07	763.8	49	9.4	93	S	6	2.7	.....	.....	10n	.....	S	0.04	1.0	Light rain	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	50	10.0	26	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	76	24.4	81	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.14	740.1	29.98	761.5	52	11.1	93	SE	1	0.4	.....	.....	10s	.....	Calm	0.75	19.1	Cloudy	
Los Angeles, California	29.70	754.4	30.03	762.7	64	17.8	88	NW	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
Louisville, Kentucky	29.68	753.9	30.24	768.1	55	12.8	67	SE	2	0.9	.....	.....	10s;fg	.....	Calm	0	0	Cloudy	
Lynchburg, Virginia	29.78	756.4	30.48	774.2	52	11.1	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Maricopa Wells, Arizona	.....	.....	.....	.....	55	12.8	57	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.44	747.8	30.15	765.8	46	7.8	76	S	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	28.40	721.3	30.12	765.0	67	19.4	64	NE	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Memphis, Tennessee	29.78	756.4	30.09	764.3	59	15.0	66	SE	10	4.5	.....	.....	10s	.....	S	0	0	Cloudy	
Milwaukee, Wisconsin	29.54	750.3	30.24	768.1	49	9.4	93	S	3	1.3	.....	.....	10s	.....	S	0.03	0.8	Threatening	
Mobile, Alabama	30.13	765.3	30.17	766.3	64	17.8	78	E	4	1.8	.....	5ck	5s	W	Calm	0	0	Cloudy	
Montgomery, Alabama	30.04	763.0	30.28	769.1	55	12.8	70	E	8	3.6	.....	2c	Haze	W	Calm	0	0	Clear	
Morgantown, West Virginia	29.32	744.7	30.41	772.4	45	7.2	96	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Mt. Washington, N. H.	24.02	610.1	30.38	771.6	24	— 4.4	88	NW	42	18.8	.....	5k	Fog	NW	NW	0	0	Fair	
Nashville, Tennessee	29.71	754.6	30.26	768.6	52	11.1	72	E	1	0.4	.....	5ck	0	SW	.....	0	0	Fair	
New Haven, Connecticut	30.37	771.4	30.49	774.4	48	8.9	71	N	5	2.2	.....	0	Haze	.....	.....	0	0	Clear	
New London, Connecticut	30.43	772.9	30.48	774.2	46	7.8	76	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New Orleans, Louisiana	30.06	763.5	30.12	765.0	68	20.0	74	SE	4	1.8	.....	9ck;k	0	W	.....	0	0	Cloudy	
Newport, Rhode Island	30.43	772.9	30.48	774.2	49	9.4	64	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.32	770.1	30.51	774.9	50	10.0	58	NW	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.40	772.1	30.46	773.7	56	13.3	68	NE	5	2.2	.....	4k	0	NE	.....	0	0	Fair	
North Platte, Nebraska	27.16	689.8	29.79	756.7	38	3.3	71	W	14	6.3	.....	5ck	0	NW	.....	0.05	1.3	Fair	
Olympia, Washington Ter.	30.07	763.8	30.10	764.5	58	14.4	93	S	4	1.8	.....	.....	10n	.....	Calm	0.26	6.6	Light rain	
Omaha, Nebraska	28.92	734.6	30.00	762.0	49	9.4	93	S	2	0.9	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Oswego, New York	30.14	765.5	30.47	773.9	51	10.6	72	S	3	1.3	.....	5k	0	W	.....	0	0	Fair	
Pembina, Dakota	29.16	740.7	29.99	761.7	43.5	6.4	96	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.48	774.2	30.53	775.4	47	8.3	69	NW	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	.....	.....	.....	.....	60	15.6	44	SE	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.79	451.8	30.00	762.0	19	— 7.2	15	NW	52	23.2	.....	0	0	.....	.....	0.05	1.3	Clear	
Pioche, Nevada	24.27	616.4	30.04	763.0	43	6.1	43	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.57	751.1	30.42	772.7	39	3.9	91	E	3	1.3	.....	0	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.64	752.8	30.32	770.1	43	6.1	75	SE	5	2.2	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Portland, Maine	30.38	771.6	30.44	773.2	44	6.7	75	W	6	2.7	.....	0	Fog	.....	.....	0	0	Clear	
Portland, Oregon	30.13	765.3	30.22	767.6	60	15.6	88	S	4	1.8	.....	.....	10s	.....	Calm	0.11	2.8	Cloudy	
Prescott, Arizona	24.74	628.4	30.10	764.5	47	8.3	10	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.09	764.3	30.11	764.8	72	22.2	71	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.69	754.1	30.04	763.0	69	20.6	43	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.81	757.2	30.45	773.4	42	5.6	74	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.09	754.1	30.27	768.8	50	10.0	96	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Sacramento, California	29.94	760.5	30.02	762.5	63	17.2	46	NE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.51	749.5	30.08	764.0	57	13.9	63	SE	8	3.6			10s		Calm	0.02	0.5	Cloudy	
St. Marks, Florida	30.23	767.8	30.24	768.1	60	15.6	81	NE	8	3.6		5c	0	W		0	0	Fair	
St. Paul, Minnesota	29.15	740.4	29.98	761.5	46	7.8	92	SE	13	5.8			10n		Calm	0.09	2.3	Light rain	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.89	657.6	30.22	767.6	44	6.7	51	SE	4	1.8		2c	0	Calm		0	0	Clear	
San Antonio, Texas	29.27	743.4	29.85	758.2	72	22.2	95	S	2	0.9		2ck	2s	Calm	SE	0.34	8.6	Clearing	
San Diego, California	29.98	761.5	30.05	763.3	60	15.6	94	N	3	1.3			Fog			0	0	Foggy	
Sandusky, Ohio	29.66	753.4	30.35	770.9	47	8.3	70	S	10	4.5		4cs	Haze	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.46	773.7	30.48	774.2	54	12.2	55	N	11	4.9		0	Haze			0	0	Clear.	
San Francisco, California	29.97	761.2	30.03	762.7	59	15.0	81	SW	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.42	594.9	29.96	761.0	38	3.3	41	NE	4	1.8		2cs	Haze	Calm		0	0	Hazy	
Savannah, Georgia	30.24	768.1	30.33	770.4	58	14.4	69	NE	5	2.2		0	0			0	0	Clear	
Shreveport, Louisiana	29.70	754.4	29.91	759.7	66	18.9	84	S	8	3.6			10s		S	0	0	Cloudy	
Smithville, North Carolina	30.35	770.9	30.39	771.9	59	15.0	64	N	10	4.5		0	5ks		E	0	0	Fair	
Springfield, Massachusetts	30.30	769.6	30.43	772.9	49	9.4	71	Calm	0	0		0	0			0	0	Clear	
Stanwix, Arizona																			
Stockton, Texas					59	15.0	81	NW	12	5.4		0	0			0.10	2.5	Clear	
Thatcher's Island, Mass.	30.41	772.4	30.47	773.9	49	9.4	57	NW	4	1.8		0	0			0	0	Clear	
Toledo, Ohio	29.63	752.6	30.32	770.1	49	9.4	71	S	2	0.9			10s		Calm	0	0	Cloudy	
Tucson, Arizona	27.70	703.6	30.25	768.3	62	16.7	70	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.28	769.1	30.31	769.9	63	17.2	78	NE	24	10.7		1k	0	NE		0	0	Clear.	
Umatilla, Oregon	29.81	757.2			60	15.6	70	SW	10	4.5		0	0			0	0	Clear.	
Vicksburg, Mississippi	29.85	758.2	30.11	764.8	60	15.6	87	SE	12	5.4		8k	0	W		0.08	2.0	Clearing	
Virginia City, Montana	24.43	620.5	29.91	759.7	45	7.2	60	Calm	0	0			10s		Calm	0	0	Cloudy	
Visalia, California	29.67	753.6	30.04	763.0	62	16.7	50	E	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.40	772.1	30.52	775.2	45	7.2	85	N	1	0.4		0	Sm'e			0	0	Smoky	
Wickenburg, Arizona					50	10.0	2	NW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.32	770.1	30.40	772.1	56	13.3	62	NE	8	3.6		0	0			0	0	Clear.	
Winnemucca, Nevada	25.89	657.6	30.25	768.3	31	— 0.6	60	SE	6	2.7		0	0			0	0	Clear.	
Wood's Holl, Mass.	30.43	772.9	30.49	774.4	52	11.1	72	N	2	0.9		0	0			0	0	Clear	
Yankton, Dakota	28.70	729.0	30.00	762.0	44	6.7	87	NW	6	2.7		0	0			0.25	6.3	Clear	
Yuma, Arizona	29.86	758.4	30.03	762.7	65	18.3	36	SW	1	0.4		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.15	765.8	30.20	767.1	19.0	— 7.2	92	NW	5	2.2		3k	0	S		0.01	0.3	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	80	26.7	74	N	2.4	1.1		2k	2ks	N	N	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764 8	30.12	765.0	83	28.3	83	Calm	0	0		5c	2s	Calm		0	0		James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	86	30.0		NE								0.28	7.1	Clear	F. M Everett.
St. Thomas, W. I.							75	NE			1	2c	2ks	E		0.10	2.5	Clear.	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.77	756.1	29.79	756.7	81	27.2	90	SE				2c	5ks		SE				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.00	762.0	85	29.4	72	E			2	5k	6ks	E		0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			67.5	19.7	80	Calm			0		10ks			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.: Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.04	763.0	61	16.1	58	14.4	94	WNW	2	0.9			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.31	769.9			70	21.1	80	NE	17	7.6			7		ESE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H.	30.35	770.9	60	15.6	42	5.6	66	Calm	0	0			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.80	756.9	67	19.4	61.5	16.4	69	NW			1		18		NW	0	0			Fair	
Adams, Montevideo, Uruguay	30.06	763.5	63	17.2	62	16.7	61	N			2		1		N	0	0	None		D. clouds	
Alert, Vladivostok	30.10†	764.5†	59	15.0	60	15.6	88	N			0–1		1		N					D. clouds	
Alliance, Constantinople, Turkey	30.10	764.5	72	22.2	71	21.7	62	N&E			2		10		N&E					Overcast	
Ashuelot, N. 38° 12′, E. 120° 15′	30.22	767.6	71	21.7	66	18.9	68	SW			1–2		0					Smooth		Hazy	
Canonicus, New Orleans, La.	30.12	765.0	50	10.0	68	20.0	100	SE			2		8		W					Cloudy	
Colorado, New York, N. Y.	30.55	776.0	65	18.3	54	12.2	61	NNW	2	0.9			7		NW	0	0			Dense fog	
Despatch, Beikos Bay, Bosphorus	30.25	768.3	90	32.2	61	16.1	82	NE			3–5		10		NE			Smooth		Rainy	
Franklin, Norfolk, Va.	30.50	774.7	55	12.8	59	15.0	82	NE	1	0.4			3		NE	0	0			Clear	
Frolic, N. 15° 57′, W. 62° 46′	30.05	763.3	84	28.9	83	28.3	100	NE			1		4kn		Calm	Blank	Blank	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.76‡	755.9‡			71	21.7	100	NE			3		8		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 5° 49′, E. 83° 40′	29.96	761.0			83	28.3	83	SSW			3		10			0	0	Smooth		Misty	
Lackawana, Esquimault, B. C.	30.09	764.3			57	13.9	87	SW			1–2		5		N&E			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.91	759.7	76	24.4	76	24.4	64	SSW			0		8		Calm	Light	Light	Smooth		D. clouds	
Michigan, Lake Huron	29.74	755.4	63	17.2	53	11.7	86	SSW			2		10		SW					Cloudy	
Monocacy, Hakodadi, Japan	29.65	753.1	64	17.8	62	16.7	72	NNW			5		0			Light	Light	Smooth		Blue sky	
Monongahela, N. 36° 26′, W. 58° 09′	29.94	760.5	71	21.7	71	21.7	80	N			6–7		kn					Rough	N&W	Squally	
New Hampshire, Port Royal, S. C.	30.48	774.2			61	16.1	71	NE	18	8.0			1		NE					D. clouds	
Omaha, Valparaiso, Chili	30.16	766.1	63	17.2	60	15.6	82	N	4	1.8			10		N	0	0	Slight	N	Cloudy	
Onward, Callao, Peru	30.07†	763.8†	71	21.7	69	20.6	85	SE			3		10					Long	W	Overcast	
Ossipee, Newport, R. I.	30.51	774.9	65	18.3	52	11.1	79	N			2		1		Calm					D. clouds	
Palos, Shanghai, China	30.27	768.8	69	20.6	66	18.9	64	ENE			2		0			0	0			Clear	
Pensacola, Mare Island, Cal.	30.09	764.3			62	16.7	100	Calm			0		0			0	0			Clear	
Plymouth, Norfolk, Va.	30.70	779.8	63	17.2	58	14.4	76	NE			3		5		NE					Clear	
Ranger, Nagasaki, Japan	30.22	767.6			65	18.3	84	NE			1		5		Calm	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.90	759.4			77	25.0	91	SSW			2		2		NW					D. clouds	
Santee, Annapolis, Md.	30.54	775.7	59	15.0	56	13.3	75	NW			1					0	0			Clear	
St. Louis, League Island, Pa.	30.35	770.9	48	8.9	49	9.4	??	SE	3	1.3			3		SE	0	0			Fair	
Tennessee, Yokohama, Japan	29.80	756.9	69	20.6	64	17.8	62	NW	4	1.8			1		S&E	0	0	Smooth		D. clouds	
Trenton, Marseilles, France	30.10	764.5	61	16.1	58	14.4	94	NE	7	3.1			10		Calm	0.5	13.			Raining	
Vandalia, Smyrna, Turkey	29.94	760.5	80	26.7	81	27.2	91	W			1		8		W					D. clouds	
Wabash, Boston, Mass.	30.43	772.9	49	9.4	44	6.7	68	NW	3	1.3			0			0	0			Clear	
Wyoming, Washington, D. C.	30.66†	778.7†	62	16.7	60	15.6		E			1		10							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 34° 29′, E. 138° 08′			30.05*	763.3*	70	21.1	70	W			7		8		W	Rough	W	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 02′, E. 177° 21′			30.03†	762.7†	67	19.4		SSW			5		10		SSW	Smooth	S	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Glendell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 34° 24′, E. 138° 56′			30.17*	766.3*	75	23.9	??	N			4		8		NE	Smooth	NE	D clouds	Capt. W. H. Kidley
S. S. Oceanic, N. 29° 40′ W. 160° 24′			30.05	763.3	77	25.0	69	SW			1–3		4		W	Smooth		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Queenstown, Ireland			30.53*	*775.4	65	18.3		NNE			3		7		NE	Heavy	SE	Hazy	Captain Sargent.
S. S. Ohio, Liverpool			30.54	775.7	66	18.9	74	WNW			4				WNW				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.31	769.9	67	19.4	69	N	13	5.8		0	0					Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., *fg.* and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 8, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.93	760.3	73.9	23.3	53	NW			1		2			0	0	Fair	Michel.
Algiers			29.84	757.8	68.0	20.0	60	N			1		3			0.177	4.5	Pretty Fair.	Peter.
La Calle			29.77	756.1	62.2	16.8	85	W			3		8			0.906	23.0	Very cloudy	Fleury.
Tunis			29.82	757.4	68.0	20.0	54	NW			4		6			0.114	2.9	Cloudy	Jacques.
Sfax			29.85	758.1												0	0		Husson.
Saida			29.89	759.2	66.6	19.2		N			2		2			0	0	Fair	Millot.
Tebessa			29.76	756.0				W			4		4			0	0	Cloudy	Bourgeois.
Geriville			29.85	758.3	40.6?	4.8?	50	NNW			2		2			0	0	Fair	Lemaillot.
Laghount			29.89	759.2	68.0	20.0	47	E			4		0			0	0	Clear	François.
Biskra			29.84	758.0	74.8	23.8	58	NW			2		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.14	740.2	29.70	754.3	43.7	6.5	85	SW			2		10			0.102	2.6	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.76	730.5	29.53	750.0	47.1	8.4	84	W			3		10			0.039	1.0		Dr. Wierzbiski.
Eperies	28.71	729.2	29.60	751.8	40.5	4.7	86	S			1		10ns		Calm	0	0		Julius Mikolik.
Gratz	28.40	721.4	29.66	753.3	45.1	7.3	86	S			2		10			0.118	3.0		Andreas Rospini.
Hermannstadt	28.18	715.8	29.60	751.9	47.1	8.4	74	SW			3		8			0	0		Prof. Reissenberger.
Kremsmünster	28.28	718.3	29.64	752.8	40.6	4.8	87	W			4		10			0.295	7.5		Prof. O. Wagner.
Lemberg	28.56	725.5	29.56	750.7	43.5	6.4	84	N			2		10			0.189	4.8		Dr. T. Stanecki.
Pola	29.48	748.9	29.60	751.7	55.6	13.1	61	Calm			0		10s			0	0		I.R.Hydrographic Office
Szathmár																			Johann Tamas, S. J.
Szegedin	29.38	746.3	29.67	753.6	40.3	4.6	100	Calm			0		10			0.205	5.20		Karl Stancel.
Trieste	29.53	750.1	29.63	752.7	54.3	12.4	69	NE			1		10			Inap.	Inap.		P. Busin.
Vienna	28.90	734.0	29.60	751.9	44.1	6.7	78	W			4		10			0.028	0.7		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.8 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.37	720.5	29.90	759.4	44.4	6.9	71	NNW			5		9			0.012	0.3		
Brussels	29.74	755.4	29.94	760.5	50.0	10.0	76	NNW			6		10		N	0.165	4.20	Raining	Royal Observatory.
Furnes	30.02	762.5	30.04	763.1	51.8	10.7	76	NNW			8		8			0.122	3.1		
Maeseyck	29.73	755.1	29.86	758.4	50.2	10.1	93	NW			2		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:06, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:06 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer
Aberdeen	30.23	767.8	30.33	770.4	44.7	7.1		NW	23	10.3			6			0.020	0.51	Squally	W. Boswell.
Ardrossan	30.32	770.1	30.34	770.6	56	13.3		NNW			3		3					Blue sky	William McNeil.
Armagh, Observatory			30.43	772.9	54.9	12.7		N	6	2.7			7					Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.30	769.6	55.0	12.8		NNE	18	8.0			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.48	774.2	54.9	12.7		NNW			3		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.87	758.7	30.27	768.8	50.9	10.5		N			4		6			0.1	3.	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	86	30.0		NE			2		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.15	765.8	52.0	11.1		N			3		10			Blank	Blank	Overcast	H. Todd.
Cardington			30.20	767.1	52.0	11.1		N			5		9					Overcast	John McLaren.
Chatham, School M. E	30.02	762.5	30.15	765.8	52.2	11.2		N			5		9					Overcast	Lt. W. G. Morris, R. E.
Dartmoor	28.81	731.8	30.29	769.4	52.0	11.1		NW			4		7					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.33	770.4	30.36	771.1	54	12.2		N			6		2					D. clouds	J. Mac Gowan.
Dover	30.05	763.3	30.08	764.0	53	11.7		N			6		5					½ clouded	J. Costello.
Eccles, (near Manchester)			30.26	768.6	57.5	14.2		NNE	2.8	1.3			3?					Overcast?	Thomas Mackereth.
Falmouth, Observatory	30.07	763.8	30.30	769.6	56.9	13.8		NNW			5		9					Squally	The Staff.
Fort Napier, (Natal)	27.43	696.7	29.62	752.3	84.6	29.2		E			4		2					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.92	760.0	87	30.6		W			0		3					D. clouds	
Galway, Queen's College					59	15.0		E			2		1					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.93	760.2	29.96	761.0	73.0	22.8		E			2		6					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.14	765.5	30.35	770.9	52.8	11.6		N			2							Blue sky	D. G. Maclean.
Great Yarmouth	30.06	763.5	30.06	763.5	51	10.6		NNW			6		5					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.99	761.7	30.16	766.1	52.4	11.3		N			4		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.96	761.0	30.18	766.6	60	15.6		NW			4		6					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.32	770.1	56	13.3		N			6		8					Gloomy	M. P. Moyle.
Holyhead	30.27	768.8	30.32	770.1	55	12.8		N			6		1					Blue sky	John Tilston.
Jersey	29.91	759.7	30.20	767.1	58.0	14.4		N			5		10			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			30.18	766.6	52.7	11.5		N	20	8.9			9kd					Threatening	The Staff.
Kingstown	30.38	771.6	30.41	772.4	56	13.3		NNW			5		5					D. clouds	George Mitchell.
Leicester, Museum			30.29	769.4	52.0	11.1		N			3		8					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.66	753.4	29.74	755.4	72.8	22.7		NW			1		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	30.28	769.1	30.37	771.4	49	9.4		WNW			3		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	75.5	24.2		E			4		8			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.07	763.8	30.26	768.6	51.5	10.8		NNW			5		10kd		NNW	0.11	2.8	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.70	754.4	30.23	767.8	51.9	11.1		NNE			4-5		4					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.20	767.1	54	12.2		N			3		7					D. clouds	F. Lucas
Plymouth	30.19	766.8	30.26	768.6	58.0	14.4		N			3		10					Foggy	John Merrifield.
Roche's Point	30.40	772.1	30.45	773.4															W. Kennedy.
Saint Ann's Head	30.16	766.1	30.33	770.4	57	13.9		N			6		7					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			30.37	771.4	45.5	7.5		NNW	24	10.7			6					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.66	753.4	64.4	18.0		SSE			2		10					Heavy rain.	Sergt. W. H. Lyne.
Sheffield	30.01	762.2	30.25	768.3	52.1	11.2		NE			4		5			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.29	769.4	30.32	770.1	55.2	12.9	56	SE			3		2			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					51.1	10.6		N			2		8					D. clouds	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			30.41	772.4	50	10.0		N			3		0					Blue sky	John Smith.
Stratfield Turgiss	29.98	761.5	30.20	767.1	53.9	12.2		NW			2		4					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.35	770.9	48	8.9		N			5		6					D. clouds	John Trotter.
Truro, Royal Institution			30.33	770.4	59	15.0		N			6		10					Gloomy	W. Newcombe.
Valencia, Observatory			30.52	775.2	56.1	13.4		N	18	8.0	8							D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					55	12.8		N			4		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.93	760.2	29.97	761.2	58.7	14.8	71	W	20	8.9		1	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.15	765.8	50.0	10.0	87	S			2		10n			0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.37	771.4	51.5	10.8		N			3		4k			0	0	Fine	Andrew Gibb.
Mauritius, Observatory	30.06	763.5	30.25	768.3	73.7	23.2	55	E	16.0	7.2		0	4		E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.90	759.4	30.00	762.0	57.1	13.9	92	SW	13	5.8			5			0	0	Lightning	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.44	773.2	54	12.2		NW			4	10	5	NW		0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.23	767.8	43	6.1		N			7	3	8	NW					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Direction from—	Weather	Observer
S. S. Algeria				Capt. W. Watson.
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine, N. 51° 26′, W. 34° 30′	2	SE	Foggy	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller, N. 48° 45′, W. 32° 30′	5	E	Drizzling	Capt. Alex. Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2			67.1	19.5	88	NE			1		7csd		NE	Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	29.54	750.2	29.58	751.4	48.4	9.1	57	N			6		0						
Fanöe	29.71	754.7	29.73	755.2	53.8	12.1	52	N			6		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.07	763.8	30.11	764.9	54.3	12.4	95	SW			4		8						
Thorshavn, (Faröe)																			
Vestervig	29.57	751.1	29.74	755.4	50.7	10.4	70	NNE			4		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.58	751.4	30.13	765.4	55.4	13	36	NE			4		10			Blank	Blank	Covered	Collignon, Director.
Amiens, Normal School	30.00	762.0	30.11	764.8	53 6	12.0	69	NW			4		5		W	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.72	755.0	29.80	757.0	56.5	13.6	30	N			8		5		N	0	0	Cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.37	745.9	29.94	760.4	52.0	11.1	73	N			2		10		N	0.091	2.3	Sprinkling	C. Saillard.
Beaumette Obs'y (Angers)	30.11	764.8	30.27	768.9	59.4	15.2	68	N	6.7	3.0					N	0	0		Albert Cheux.
Beauvais	29.77	756.2	30.06	763 5	54.5	12.5	49	NNW			6		10		NNW	0	0	Covered	Normal School.
Besançon	29.04	737.5	29.95	760.6	43.2	6.2	88	S			8		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.13	740.0	30.05	763.2	43.7	6.5	91	N			1		10n					Covered	Normal School.
Bourges, Normal School	29.43	747.5	29.98	761.6	52.5	11.4	86	WSW			2		5		N	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.97	761.1	30.19	766.7	57.4	14.1	73	N			5		9n		N	0	0		The Staff.
Carcassonne, Normal School	29.62	752.4	30.04	763.0	55.0	12.8	48	W			4		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.09	764 2	30.16	766.1	55.9	13.3	75	S			8		5		S	0.020	0.5	Cloudy	Normal School.
Chartres, Normal School	29.47	748.5	30.04	762.9	57.6	14.2	80	N			6		9		S	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.62	752.3	29.94	760.4	52.5	11.4	90	NW			2		10n			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.65	727.6	30.01	762.2	51.4	10.8	75	N			2		10		N	0	0	Covered	Alluard, Director.
Commercy, Normal School	28.99	736.3	29.87	758.6	48.6	9.2	76	NW			2		8n		NW	0.283	7.2	Very cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.55	725.2	29.69	754.2	60.3	15.7	41	NW			6		2		NW	0.532	13.5	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.91	759.8	30.13	765.3	60.8	16	69	NW			2		8		NW	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.78	756.4	30.09	764.3	56.3	13.5	68	NE			4		8		NE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.03	737.4	29.93	760.2	43.3	6.8	85	SW			1		10			0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.12	765.0	30.22	767 6	61.2	16.2	67	NNE			2		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.27	743.5	29.97	761.2	48 0	8.9	81	NNW			2		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.82	732.0	29.87	758.7	50.7	10.4	79	NE			6		10		SW	0	0	Covered	Normal School.
Nismes, Normal School	29.58	751.4	29.78	756.5	64.8	18.2	72	NE			6		2		NE	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.65	753.0	30.03	762.7	56.5	13.6	64	N			6		8		N	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.78	756.4	30.02	762.4	55 0	12.8	52	NNW			3		10kn		N	0	0	Covered	National Observatory.
Privas	28.84	732.6	29.91	759.8	54.5	12.5	46	N			4		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.11	764.7	30.14	765.5	57.6	14.2	84	W			1		10		SW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.01	762.2	30.10	764.4	56.5	13.6	52	N			6		8		N	0.039	1.0	Very cloudy	F. Lucard, Director.
Tarbes, Normal School	29.11	739.3	30.19	766.8	58.3	14.6	57	W			2		10		E	0	0	Covered	T. Hugues, Director.
Villefranche	29.24	742.8	29.97	761.2	46.8	8.2	92	SE			2		10		S	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.1	29.80	756.8	80.6	27										0	0		L'Abbé Marchési.
Marseilles, Observatory			29.66	753.3	59.2	15.1	28	NW			8		7			0	0	Cloudy	The Staff.
Mont-Louis	24.77	629.1	30.08	764.1	44.4	6.9	38	NW	18.6	8.33			7		N	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.73	755.2	30.01	762.2	54.7	12.6	54	NNW			4		10k		NNW	0	0		Marié Davy, Director.
Perpignan			29.88	758.9	59.5	15.3	15	NW	48.5	21.67			7		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.25	539.7			26.6	— 3.0		N			3		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.50	571.4			32.0	0.0		N			3		10			0.043	1.1	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.85	758.1	30.01	762.3	53.8	12.1	65	NNW			2		10		N	0.020	0 5		E. Renou.
Toulouse, Observatory	29.40	746.8	30.13	765.2	53.2	11.8	54	NW			6		9			0.012	0.3		The Staff.
Tours	29.86	758.4	30.06	763.4	57.6	14.2	74	NE			2		10		N	0.008	0.2		C. Marquet.
Versailles, (near Paris)			30.02	762.6	55.8	13.2	53	NNE			6		10			0	0	Squally	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.17	766.3	30.20	767.0	59 0	15.0	80	E	4.0	1.8			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 130 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.38	746.2	29.55	750.6	46.6	8.1	78	N			2		5			0.393	9.98	Raining	Prof. Arndt.
Breslau	28.98	736.2	29.51	749.5	46.2	7.9	79	WNW			2		7			0.126	3.20		Royal University Obs'y.
Carlsruhe	29.33	744.9	29.75	755.7	48.4	9.1	83	N			1		5			0.322	8.2		Albert Senz.
Cassel	29.16	740.7	29.76	756.0	51.1	10.6	57	NNW			6		5	NW		0.278	7.05		Dr. H. Möhl.
Crefeld	29.66	753.4	29.82	757.5	50.0	10.0	78	N			6		5k			0.16	4.		Director Lose.
Emden	29.79	756.6	29.82	757.5	52.9	11.6	68	N			6		1			0.197	5.0		Prof. Prestel.
Frankfort on the Main	29.41	747.0	29.78	756.3	51.8	11.0	50	NNW			3		6			0.043	1.1		Physical Society.
Friedrichshafen	28.37	720.7	29.84	757.8	42.3	5.7	86	SW			9		10	WSW		0.244	6.2	Rain, gr'pel, snow	M. Wilhelm.
Hamburg	29.62	752.3	29.69	754.1	51.8	11.0	54	NNE			5		1k			0.417	10.6	Clear	Captain F. Hegemann
Kiel	29.68	753.8	29.69	754.2	50.9	10.5	57	N			3		6			0.224	5.69		Prof. G. Karsten.
Königsberg, (Prussia)	29.26	743.2	29.34	745.2	43.9	6.6	91	SW										Cloudy	Prof. E. Luther.
Köslin			29.40	746.8	48.9	9.4		W			6		2			0.508	12.9		H. Müller.
Leipsic, Observatory	29.21	741.8	29.63	752.5	46.4	8.0	79	NNW			4		7	NW		0.276	7.0		Prof. Bruhns.
Memel, Naval School	29.34	745.1	29.38	746.2	41.5	5.3	92	S			5		10n					Raining	Reinbrechtvon Skalweit.
Neufahrwasser	29.36	745.7	29.37	746.1	48.9	9.4	82	NNW			5		10			0.150	3.8		A. Lothes.
Posen	29.20	741.7	29.49	749.0	48.6	9.2	82	NW			2		5					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.26	743.3	29.82	757.5	46.8	8.2	90	NE			2		9	NW				Rain & hail.	Dr. Schur.
Stuttgart	28.80	731.4	29.74	755.4	47.7	8.7	77	W			2		8	N		0.094	2.4	Raining	Prof. Schoder.
Treves, (Trier)	29.20	741.7	29.72	754.8	53.2	11.8	49	NE			7		4			0.106	2.71		Prof. Flesch.
Weissenburg, (Bavaria)	28.16	715.3	29.69	754.0	42.8	6.0	85	NW			2		8		NW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.59	751.6	29.64	752.8	49.1	9.5	61	N			5		3					Fair	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.34	745.3	29.72	755.0	72.9	22.7		SW										¾ clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.78	756.4	29.83	757.7	83.5	28.6	75	SW	34.02	15.22			0			0	0	Blue sky	
Deesa	29.36	745.9	29.84	758.0	85.6	29.8	49	N					0			0	0	Blue sky	
Bombay	29.79	756.7	29.83	757.7	82.9	28.3	81	WNW	6.0	2.7			3	NNW		0.32	8.1	D. clouds	
Poona	27.79	705.9	29.80	757.0	76.0	24.4	82	NW					7		W	0	0	Lightning	
Lahore	29.14	740.1	29.88	759.0	80.0	26.7	64	E	2.9	1.3			1			0	0		
Belgaum	27.35	694.6	29.91	759.7	71.8	22.1	88	W	6.0	2.7			4			0.08	2.0	D. clouds	
Bangaloré																			
Roorkee	28.97	735.8	29.89	759.1	70.4	21.3	95	Calm	1.6	0.7			9			0.18	4.6		
Agra	29.22	742.1	29.78	756.5	76.8	24.9	86	E					10			0	0		
Trichinopoly																			
Nagpur	28.78	731.0	29.81	757.2	80.3	26.8	84	SE	5.3	2.4			9			0	0	Thunder	
Madras																			
Lucknow	29.49	749.0	29.87	758.7	72.3	22.4	95	ESE	8.9	4.0			7		W	0	0	Drizzling	
Allahabad	29.53	750.0	29.84	757.9	77.7	25.4	93	E	4.2	1.9			10		E	0.24	6.1	Thunder-storm	
Patna	29.71	754.5	29.89	759.2	75.3	24.1	91	E	1.1	0.5			10	E	E	0	0	Overcast	
Hazaribagh	27.86	707.7	29.90	759.3	73.8	23.2	83	E	9.3	4.2			10		N	0.37	9.4	Drizzling	
Cuttack	29.81	757.1	29.89	759.2	81.2	27.3	77	S	3.3	1.5			6			0	0	D. clouds	
Calcutta (Alipore)	29.88	758.9	29.90	759.5	80.6	27.0	84	WSW	1.0	0.4			1			0	0	D. clouds	
Goalpara	29.51	749.6	29.91	759.7	72.5	22.5	90	WSW	1.3	0.6			2	W		0.02	0.5	D. clouds	
Chittagong	29.84	757.8	29.93	760.2	80.9	27.2	87	NE	6.3	2.8			8			0	0	Gloomy	
Sibsagar	29.58	751.4	29.92	760.0	76.6	24.8	92	ENE	1.3	0.6			10	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.47	723.1	29.83	757.8	80.0	26.7	79	SE	6.1	2.7			9	SE	E	0.95	24.1	Overcast	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.85	554.9	29.71	754.7	36.1	1.7	70	ESE			6		6	N		0	0		Ab. Dom. Morgini.
Stelvio	21.82	554.1	29.70	754.4	28.2	— 2.1		Calm			0		10			0.020	0.5		Signora Ernesta Manfredi.
Udine	29.19	741.3	29.60	751.7	52.7	11.5	53	NE	0.7	0.3			7			0	0		Prof. Giovanni Clodig.
Padua	29.45	748.0	29.56	750.8	57.2	14.0	51	W	4.3	1.9			6			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.36	745.8	29.56	750.7	57.9	14.4	53	S	3.8	1.7			5	W		0	0		Conte Alm. Da Schio.
Verona	29.33	745.0	29.55	750.6	67.6	19.8	46	SW	0	0			10			0	0		Dott. B. Bertoncelli.
Bergamo	28.26	717.7	29.57	751.0	55.4	13.0	69	S			1		10			0	0		Prof. Trionfini Carlo.
Domodossola	28.49	723.7	29.52	749.8	63.5	17.5	34	N			8		7			0	0		Prof. Giuseppe Calza
Milan	29.12	739.7	29.64	752.8	58.5	14.7	58	W			2		3	WNW		0	0		Ab. Gio. Capelli.
Pavia	29.24	742.8	29.59	751.6	58.5	14.7	51	S			4		9	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.67	728.3	29.58	751.4	56.5	13.6	71	SE	2.5	1.1			6	N		0	0		Prof. P. F. Denza.
Mondovi	27.67	702.7	29.58	751.4	56.1	13.4	55	NNW			4		8	NNE		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.36	745.8	29.58	751.3	64.4	18.0	52	SW			4		4	E		0	0		Prof. L. Vassallo.
Genoa	29.42	747.2	29.59	751.5	65.5	18.6	40	SW	4.3	1.9			8	W		0	0		Prof. G. M. Garibaldi
Piacenza	29.32	744.8	29.58	751.3	57.7	14.3	40	W	4.9	2.2			10			0	0		Dott. G. Manzi.
Parma	29.26	743.1	29.57	751.1	59.0	15.0	45	NW			4		9			0	0		Prof. P. Pigorini.
Florence	29.35	745.4	29.60	751.9	62.2	16.8	44	E			2		3	NE		0	0		Cav. F. Meucci.
Leghorn	29.51	749.5	29.59	751.6	62.4	16.9	50	WNW	4.9	2.2			6			0	0		Prof. P. Monte.
Siena	28.39	721.2	29.60	751.8	58.1	14.5	54	SE	0	0			8	N		0	0		Prof. L. Toscani.
Urbino	28.12	714.2	29.68	753.9	51.1	10.6	68	NE			2		10			0.047	1.2		Prof. P. Serpieri.
Pesaro	29.57	751.1	29.62	752.3	55.2	12.9	66	NW	32.2	14.4			10	NW		0	0		Prof. Luigi Guidi.
Ancona	29.48	748.8	29.59	751.5	56.5	13.6	65	W			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.54	750.4	29.65	753.2	64.8	18.2	51	SE			2		6	S		0	0		Avv. P. Ponticelli.
Rome	29.41	747.0	29.58	751.4	67.6	19.8	55	SW	6.9	3.1			9			0.020	0.5		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.48	748.8	29.68	753.8	68.4	20.2	73	SE			2		6	SW		0.764	19.4		Prof. L. Palmieri.
Lecce	29.36	745.8	29.61	752.1	66.2	19.0	76	SSE	7.4	3.3			8	SE		0.020	0.5		Prof. C. De Giorgi.
Cosenza	28.87	733.4	29.757	755.67	68.2	20.1	73	SE	0.7	0.3			9			0.744	18.9		Prof. F. D. Conti.
Cagliari	29.39	746.6	29.58	751.4	61.9	16.6	69	N			4		8	NW		0.039	1.0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.55	750.5	29.60	751.7	71.2	21.8	49	NE			2		9	S		0.319	8.1		Prof. F. Cafiero.
Palermo	29.42	747.2	29.67	753.5	67.3	19.6	62	WSW	11.9	5.3			10			0.197	5.0		Prof. G. Cacciatore.
Caltanissetta	27.80	706.0	29.71	754.6	60.8	16.0	74	WSW			6		10			0.031	0.8		Prof. A. Pagani.
Syracuse	29.65	753.0	29.72	754.9	70.9	21.6	65	W			6		10	WNW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.13	739.8	29.68	753.9	64.9	18.3	71	SSE	0.7	0.3			5			0.311	7.9		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,14[illegible].3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.08	764.0	30.18	766.6	65	18.3	86	NE	1.6	0.7			9			0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.19	589.1	30.27	768.7	50.0	10.0	83	NW	4.0	1.80		6c	1k	NW		0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing																			
Groningen	29.99	761.7	29.99	761.7	51.8	11.0		N			5					0.039	1.0		
Helder	29.77	756.2	29.83	757.6	50.7	10.4		N			5					0.177	4.5		
Hellevoetsluis	29.90	759.4	29.90	759.4	50.0	10.0		NNW			6					0.248	6.3		
Utrecht			29.94	760.5	51.4	10.8	76	N			6								
	29.85	758.3	29.90	759.5	50.5	10.3	74	NNW			5		10			0.134	3.4	Overcast	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.89	759.1	29.94	760.5	45.3	7.4	57	NNW	29.5	13.2			1			0	0		
Brönö	29.69	754.0	29.72	755.0	39.9	4.4	74	NNW	29	13			7			1.630	41.4		
Christiania	29.58	751.2	29.72	754.9	48.6	9 2	25	NNW	18	8			6			0	0		
Tromsö	29.47	748.5	29.51	749.6	34.9	1.6	71	ENE	4	2			10			0.445	11.3		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.12	765.1	30.31	769.9	69.6	20.9	94	ESE	4.3	1.9			9			0	0		Dr. J. A. Sampaio.
Campo Major	29.12	739.7	30.14	765.5	66.2	19.0	25	ENE	11.2	5.0			4	ENE		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.10	764.5	30.17	766.3	75.2	24.0	71	SW	3.8	1.7			7			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.79	756.6	30.14	765.6	68.2	20.1	22	NE	23.7	10.6			4	NNE		0	0		The Staff.
Ponta Delgada, (Azores)	30.26	768.6	30.33	770.4	71.2	21.8	86	ESE	2.5	1.1			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.03	737.4	29.45	748.1	47.3	8.5	60	WSW	13	6			10						Astronomical Obs.
Wilna	29.03	737.4	29.45	748.0	47.8	8.8	50	S	13	6			5						Astronomical Obs.
Dorpat	29.10	739.1	29.34	745.3	37.4	3.0	95	SSW	9	4			10						Physical Cabinet.
St. Petersburg	29.28	743.8	29.30	744.2	37.9	3.3	92	SSW	13	6			10					Light rain	Central Physical Obs.
Knopio	28.89	733.7	29.21	741.8	39.2	4.0	95	W	7	3			10					Raining	Ch. Forsten.
Kieff	29.07	738.4	29.71	754.7	44.6	7.0	61	SSE	11	5			10						Physical Cabinet.
Nikolaiev	29.78	756.5	29.85	758.3	42.4	5.8	94	Calm	0	0			10						Kurdakof.
Kertch	30.17	766.2	30.19	766.7	58.5	14.7	93	SE	9	4			10						Lagorio.
Moscow	29.21	741.9	29.76	755.9	45.3	7.4	45	S	11	5			0						Meteorological Obs.
Lugan	29.74	755.3	29.94	760.5	51.1	10.6	46	SE	4	2			4			Blank	Blank		Meteorological Obs.
Archangel	29.06	738.2	29.08	738.7	39.6	4.2	98	S	9	4			10					Raining	Ogorodnikof.
Tiflis	28.86	733.1	30.29	769.3	56.8	13.8	73	Calm	0	0			5						Physical Observatory.
Astrakhan	30.33	770.4	30.25	768.3	52.5	11.4	57	SE	11	5			1						Sebastianof.
Kasan	29.53	750.1	29.81	757.1	44.1	6.7	58	SW	4	2			4						Physical Cabinet.
Orenburg																			Tschernischet.
Ekaterinburg	28.78	731.1	29.73	755.8	31.5	— 0.3	81	W	13	6			10						Meteorological Obs.
Nukuss	30.20	767.0	30.44	773.1	40.5	4.7	67	ENE	7	3			1						
Kasaly																			Bobrof.
Tashkend	28.79	731.2	30.55	776.0	46.0	7.8	89	N	22	10			10					Raining	Michelson.
Barnaul	29.25	743.0	29.77	756.1	55.4	13.0	54	W	18	8			4						Meteorological Obs.
Yeniseisk	29.73	755.2	29.88	758.9	41.5	5.3	72	SE	16	7			7						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.79	756.7	29.93	760.3	62.2	16.8	55	Calm	0	0			5						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					40.5	4.7	97	W	11	5			10					Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.88	708.1	30.08	764.1	63.1	17.3	45	SW	1.5	0.67		4	0	SW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.2	30.01	762.3	76.5	24.7	88	Calm	0	0		1ck	1k			0.063	1.6	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.94	760.6	30.04	763.1	72.1	22.3	34	NNW	12.9	5.75		2	6	NW	NW	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.85	758.2	83.5	28.6	84	SE	0	0		10kn				0	0	Overcast	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.26	743.1	29.30	744.1	43.9	6.6	.....	N	.....	.....	4	.....	0	.....	.....	0.118	3.0	.....	
Umea	29.36	745.8	29.41	747.1	43.9	6.6	79	N	.....	.....	4	.....	5	.....	.....	0	0	.....	
Hernosand	29.42	747.2	29.47	748.5	45.3	7.4	48	NW	.....	.....	6	.....	8	.....	.....	0.008	0.2	Raining	
Stockholm	29.27	743.5	29.45	748.0	38.8	3.8	93	N	.....	.....	6	.....	8	.....	.....	0.177	4.5	.....	
Wisby	29.34	745.1	29.39	746.6	44.2	6.8	77	NE	.....	.....	7	.....	10	.....	.....	0.532	13.5	Raining	
Sub-Series.																			
Upsala	29.39	746.6	29.47	748.5	43.5	6.4	60	NNW	15.0	6.7	.....	.....	10	.....	N	0.008	0.07	.....	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.49	723.7	29.95	760.6	45.1	7.3	77	SE	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.21	716.6	29.90	759.5	39.7	4.3	93	W	.....	.....	2	.....	10	.....	.....	0.150	3.8	Raining	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —2.6 mm; Thermometer, —7.1 cent.; Relative Humidity, +8 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.71	754.7	61.9	16.6	97	ESE	10	4.5	.....	.....	10	.....	SSE	1.114	28.3	Raining	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.73	755.2	66.7	19.3	.....	SE	.....	.....	2	.....	5	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	29.77	756.2	66.7	19.3	.....	SW	.....	.....	2	.....	10	.....	.....	1.50	35.	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.76	755.9	29.88	758.9	91.9	33.3	35?	ENE	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	30.56	776.2	30.63	778.0	41.2	5.1	78	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.26	768.6	49	9.4	.....	E	5	2.2	.....	.....	10s	.....	SE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.	.....	.....	30.59	777.0	35	1.7	87	NW	1	0.4	.....	5ck	2ks	NW	NW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.57	776.5	45	7.2	56	NE	8	3.6	.....	0	5ks	.....	NE	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	30.10	764.5	30.30	769.6	47.5	8.6	76	S	.....	.....	2	10c	0	NW	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	30.60	777.2	30.68	778.0	34	1.1	79	NW	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C.	30.19	766.8	30.24	768.1	43.3	6.3	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.56	776.2	37	2.8	69	Calm	0	0	.....	2cs	0	W	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.59	777.0	30.65	778.5	32.7	0.4	87	N	1	0.4	.....	c	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.07	763.8	34	1.1	97	N	5	2.2	.....	.....	Fog	.....	.....	0	0	Foggy	James Stewart.
Goderich, Ontario	29.09	738.9	29.88	758.9	49.7	9.8	94	SE	.....	.....	2	.....	10n	.....	.....	1.123	28.53	Raining	H. J. Strang, M. A
Granton, Ontario	28.79	731 3	29.89	759.2	47	8.3	100	SE	.....	.....	2	.....	10n	.....	.....	0.38	9.7	Cloudy	James Grant.
*Halifax, N. S.	30.39	771.9	30.53	775.4	39	3.9	82	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.66	753.4	30.04	763.0	51.2	10.7	89	E	.....	.....	1	10cs	0	E	.....	Inap.	Inap	Raining	Geo. Dickson, M. A
Heart's Content, N. F.	30.30	769.6	30.33	770.4	41	5.0	95	NE	.....	.....	6	2k	4ks	NE	NE	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.90	759.4	30.27	768.8	52	11.1	73	SE	26	11.6	.....	.....	10ks	.....	Calm	0	0	Cloudy	S. Woods, M. A
*Montreal, Quebec	30.17	766.3	30.37	771.4	46	7.8	77	SE	4	1.8	.....	8ck	2ks	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.34	745.2	30.04	763.0	48	8.9	89	SE	18	8.0	.....	.....	10n	.....	S	0.05	1.3	Light rain	Rev. R. Mosley
Peterboro, Ontario	29.36	745.7	30.11	764.8	53.2	11.8	70	SE	.....	.....	4	10ck	0	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.27	743.4	29.96	761.0	52	11.1	87	SE	23	10.3	.....	.....	10n	.....	S	0.35	8.9	Heavy rain	H Morgan.
Port Hastings, N. S.	30.45	773.4	30.50	774.7	47.4	8.6	.....	N	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant
Port Stanley, Ontario	29.26	743.2	29.90	759.4	53	11.7	89	SE	40	17.9	.....	.....	10n	.....	S	0.52	13.2	Heavy rain	M. Payne.
*Quebec, Quebec	30.17	766.3	30.50	774.7	43	6.1	83	NE	19	8.5	.....	.....	10n	.....	NE	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.69	754.1	30.15	765.8	47	8.3	74	E	15	6.7	.....	10cs	0	SW	.....	0	0	Cloudy	W. H. McIntyre.
St. John, N. B.	30.43	772.9	30.61	777.5	35	1.7	90	Calm	0	0	.....	0	0	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.22	742.2	29.92	760.0	47	8.3	94	SE	7	3.1	.....	.....	10s	.....	.....	0.30	7.6	Heavy rain	K. Stewart.
Stayner, Ontario	.....	.....	30.02	762.5	46	7.8	92	SE	5	2.2	.....	.....	10n	.....	SE	0.19	4.8	Light rain	R. J. Cole.
Stratford, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10n	.....	.....	.....	.....	Rainy	C. J. MacGregor, M. A.
*Sydney, C. B.	28.64	727.4	29.93	760.2	46.4	8.0	96	SE	13	5.8	.....	.....	.....	.....	.....	.....	.....	.....	T. C. Hill.
*Toronto, Ontario	30.49	774.4	30.52	775.2	44	6.7	57	NE	12	5.4	.....	0	5ks	.....	NE	0	0	Fair	Magnetic Observatory.
Windsor, N. S.	29.65	753.1	30.04	763.0	52	11.1	76	SE	11	4.9	.....	.....	10n	.....	SW	0.02	0.5	Light rain	Prof. John E. Oram.
Woodstock, Ontario	30.44	773.2	30.54	775.7	37.5	3.1	86	Calm	0	0	.....	5c	0	.....	.....	0	0	Clear	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	42.0	5.6	83	N	.....	.....	.....	5k	5s	.....	.....	Inap.	Inap.	Cloudy	John Delany.

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.21	767.3	30.44	773.2	48	8.9	77	S	2	0.9			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.20	741.7	29.84	757.9	52	11.1	93	E	13	5.8			10n		E	0.81	20.6	Light rain	
Atlantic City, New Jersey	30.32	770.1	30.34	770.6	62	16.7	66	SE	22	9.8		Haze	8s		S	0	0	Cloudy	
Augusta, Georgia	29.90	759.4	30.09	764.3	63	17.2	89	SE	4	1.8		8ck	0	SE		0	0	Fair	
Baltimore, Maryland	30.24	768.1	30.29	769.4	59	15.0	70	SE	10	4.5			10s		SE	0	0	Cloudy	
Barnegat, New Jersey	30.33	770.4	30.35	770.9	60	15.6	59	SE	20	8.9			10s		SE	0	0	Cloudy	
Bismarck, Dakota	28 18	715.8	29.85	758.2	44	6.7	84	Calm	0	0			10s		S	0	0	Clear	
Boise City, Idaho	27.33	694.2	29.98	761.5	44	6.7	84	Calm	0	0		1cs	0	Calm		0	0	Clear	
Boston, Massachusetts	30.34	770.6	30.50	774.7	52	11.1	60	Calm	0	0		2k	Fog	E		0	0	Foggy	
Brackettville, Texas	29.02	737.1	30.06	763.5	60	15.6	55	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.97	735.8	29.99	761.7	38	3.3	100	NW	5	2.2			10s		Calm	0	0	Cloudy	
Brownsville, Texas	30.04	763.0	30.11	764.8	74	23.3	81	E	14	6.3		5cs	5ks	Calm	Calm	0	0	Cloudy	
Buffalo, New York	29.30	744.2	30.00	762.0	52	11 1	79	SE	9	4.0			10n		Calm	0.09	2.3	Light rain	
Burlington, Vermont	30.14	765.5	30.40	772.1	51	10.6	64	S	4	1.8		10c	0	Calm		0	0	Cloudy	
Cairo, Illinois	29.66	753.4	30.05	763.3	54	12.2	86	SW	9	4.0		0	0			0.79	20.1	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26 93	684.0	30.42	772.7	50	10.0	51	Calm				0	0			0	0	Clear	
Campo, California	27.48	698.0	30.05	763.3	35	1.7	80	E	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.17	766.3	30.18	766.6	70	21.1	66	SE	15	6.7		5cs	0	SW		0	0	Fair	
Cape Henry, Virginia	30.20	767.1	30.22	767.6	67	19.4	64	SE	24	10.7			10s		SE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.20	767.1	30.22	767.6	72	22.2	63	SE	18	8.0		5c	0	SW		0	0	Fair	
Cape May, New Jersey	30.28	769.1	30.30	769.6	61	16.1	66	SE	16	7.2		5cs	5s	Calm	SE	0	0	Fair	
Charleston, South Carolina	30.06	763.5	30.13	765.3	69	20.6	90	E	9	4.0		10c;cs	0	W; SW		0	0	Cloudy	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	43	6.1	60	W	8	3.6		5c	0	W		0	0	Fair	
Chicago, Illinois	29.06	738.1	29.74	755.4	51	10.6	93	NW	8	3.6			10n		NW	0.53	13.5	Light rain	
Cincinnati, Ohio	29.13	739.9	29.76	755.9	57	13.9	75	SW	17	7.6			10ks		SW	0.39	9.9	Cloudy	
Cleveland, Ohio	29.13	739.9	29.85	758.2	50	10 0	78	SE	20	8.9			10s		SE	0.15	3.8	Cloudy	
Concho, Texas	28.23	717.0	29.96	761.0	48	8.9	42	NW	4	1.8		0				0	0	Clear	
Corsicana, Texas	29.69	754.1	30.17	766.3	54	12.2	93	Calm	0	0		0	0			0.28	7.1	Clear	
Davenport, Iowa	29.28	743.7	29.92	760.0	47	8.3	92	NW	6	2.7		0	Haze		Calm	0.85	21.6	Fair	
Denison, Texas	29.37	746.0	30.17	766.3	57	13.9	81	SW	3	1.3		0	0			0.	0	Clear	
Denver, Colorado	24.86	631.4	30.08	764.0	42	5.6	29	SE	5	2.2		0	0			0	0	Clear	
Detroit, Michigan	29.07	738.4	29.72	754.9	54	12.2	79	S	12	5.4			10s		S	0.79	20.1	Threatening	
Dodge City, Kansas	27.45	697.2	29.75	755.6	47	8.3	61	W	6	2.7		0	0			0	0	Clear	
Dubuque, Iowa	29.20	741.7	29.89	759.2	49	9.4	85	NW	6	2.7			10s		NW	0.18	4.6	Cloudy	
Duluth, Minnesota	29.21	741.9	29.88	758.9	48	8.9	85	E	1	0.4			10s		E	0.18	4.6	Cloudy	
Eagle Pass, Texas	29.38	746.2	30.11	764.8	65	18.3	73	Calm	0	0		0	5s		S	0	0	Fair	
Eastport, Maine	30.50	774.7	30.57	776.5	47	8.3	62	NW	3	1.3		5k	0	E		0	0	Fair	
Erie, Pennsylvania	29.17	740 9	29.88	758.9	50	10.0	86	S	38	17.0			10n			0.03	0.8	Light rain	
Escanaba, Michigan	29.22	742.2	29.86	758.4	50	10.0	86	NE	7	3.1			10s		NE	0.44	11.2	Cloudy	
Florence, Arizona	28.46	722.9	30.06	763.5	70	21.1	32	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.19	614.4	30.19	766.8	49	9.4	63	NE	7	3.1		0	0			0	0	Clear	
Fort Craig, New Mexico	25.66	651.8			40	4.4	56	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.57	751.1	30.12	765.0	43	6.1	91	SE	2	0.9		0	0			0.06	1.5	Clear	
Fort Griffin, Texas	28.86	733.0	30.15	765.8	52	11.1	86	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.91	734.3	30.02	762.5	53	11.7	93	Calm	0	0		0	0			0	0	Clear	
Fort Sully, Dakota	28.28	718 3	29.85	758.2	42	5.6	66	Calm	0	0		0	5s		SE	0	0	Fair	
Galveston, Texas	30.12	765.0	30.16	766.1	68	20.0	90	NE	1	0.4		0	0			0.20	5.1	Clear	
Grand Haven, Michigan	29.07	738.4	29.70	754.4	49	9.4	97	NE	10	4.5			10n		NE	0.64	16.3	Light rain	
Indianapolis, Indiana	29.03	737.3	29.79	756.7	52	11.1	86	W	6	2.7			10n		W	0.81	20.6	Light rain	
Indianola, Texas	30.14	765.5	30.16	766.1	74	23.3	68	NE	17	7.6		2k	0	NW		0.07	1.8	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.07	763.8	30.09	764.3	69	20.6	84	E	2	0.9		2c	Sm'e	W	Calm	0.23	5.8	Fair	
Keokuk, Iowa	29.32	744.7	29.93	760.2	51	10.6	79	NW	4	1.8			10s		Calm	0.93	23.6	Cloudy	
Key West, Florida	29.98	761.5	30.02	762.5	75.0	23.9	85	E	8	3.6			10n		E	0.59	15.0	Light rain	
Kittyhawk, North Carolina	30.24	768.1	30.26	768.6	67	19.4	84	SE	12	5.4		10cs	0	SW		0	0	Cloudy	
Knoxville, Tennessee	29.03	737.3	30.02	762.5	57	13.9	93	Calm	0	0			10s		SW	1.12	28.4	Cloudy	
La Crosse, Wisconsin	29.15	740.4	29.88	758.9	47	8.3	92	Calm	0	0			Fog			0.09	2.3	Foggy	
La Mesilla, New Mexico	26.16	664.4	30.31	769.9	43	6.1	51	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					73	22.8	85	NE	6	2.7		5cs	0	Calm		0	0	Fair	
Leavenworth, Kansas	29.17	740.9	30.03	762.7	43	6.1	83	N	2	0.9		0	0			0	0	Clear	
Los Angeles, California	29.69	754.1	30.02	762.5	62	16.7	88	N	3	1.3			Fog			0	0	Foggy	
Louisville, Kentucky	29.35	745 5	29.90	759.4	57	13.9	80	SW	8	3.6			10s		SW	0.36	9.1	Threatening	
Lynchburg, Virginia	29.50	749.3	30.19	766.8	55	12.8	73	N	4	1.8			10s		NW	0	0	Cloudy	
Maricopa Wells, Arizona					55	12.8	55	N				0	0			0	0	Clear	
Marquette, Michigan	29.18	741.2	29.87	758.7	50	10 0	86	Calm	0	0			10n		Calm	0.22	5.6	Light rain	
Mason, Texas	28.53	724.6	30.26	768.6	50	10.0	93	Calm	0	0		0	0			0.35	8.9	Clear	
Memphis, Tennessee	29.80	756.9	30.12	765.0	55	12.8	87	Calm	0	0		0	0			0.68	17.3	Clear	
Milwaukee, Wisconsin	29.14	740.1	29.81	757.2	51	10.6	93	NW	8	3.6			10s		NW	1.15	29.2	Cloudy	
Mobile, Alabama	30.09	764.3	30.13	765.3	62.5	16.9	91	N	10	4.5			10s		N	0.55	14.0	Cloudy	
Montgomery, Alabama	29.87	758.7	30.11	764.8	63.5	17.5	86	NW	5	2.2		0	5ks		NW	0.09	2.3	Fair	
Morgantown, West Virginia	28.96	735.6	30.01	762.2	52	11.1	86	S	4	1.8			10n		S	0.33	8.4	Light rain	
Mt. Washington, N. H.	24.08	611.6	30.44	773.2	31	— 0.6	100	SW	30	13.4		5cs	5s	W	SW	0	*0	Cloudy	
Nashville, Tennessee	29.52	749.8	30.05	763.3	57	13.9	75	W	5	2.2		10k	0	W		0.67	17.0	Cloudy	
New Haven, Connecticut	30.31	769.9	30.43	772.9	56	13.3	62	SE	10	4.5			10s		SE	0	0	Cloudy	
New London, Connecticut	30.43	772.9	30.48	774.2	47	8.3	85	N	4	1.8		5cs	2ks	W	E	0	0	Fair	
New Orleans, Louisiana	30.07	763.8	30.13	765.3	64.5	18.1	81	N	9	4.0			10ks	N		0.10	2.5	Cloudy	
Newport, Rhode Island	30.43	772.9	30.48	774.2	54	12.2	53	SE	10	4.5		5cs	5ks		SE	0	0	Cloudy	
New York, New York	30.21	767.3	30.39	771.9	54	12.2	68	E	13	5.8			10s; fg		SE; Calm	0	0	Cloudy	
Norfolk, Virginia	30.18	766.6	30.24	768.1	61	16.1	88	SE	6	2.7		10cs	0	Calm		0	0	Cloudy	
North Platte, Nebraska	27.07	687.6	29.67	753.6	40	4.4	83	NW	3	1.3		0	0			0	0	Clear	
Olympia, Washington Ter.	30.17	766.3	30.21	767.3	52	11.1	86	N	2	0.9			10s		Calm	0.02	0.5	Cloudy	
Omaha, Nebraska	28.89	733.8	29.99	761.7	41	5.0	73	NW	2	0.9		0	0			0	0	Clear	
Oswego, New York	29.87	758.7	30.19	766.8	54	12.2	76	SE	15	6.7			10s		Calm	0	0	Cloudy	
Pembina, Dakota	29.20	741.7	30.04	763.0	35	1.7	90	NW	5	2.2		10k	0	NW		0.09	2.3	Cloudy	
Philadelphia, Pennsylvania	30.33	770 4	30.38	771.6	51	10.6	78	NE	7	3.1		5cs	5s	Calm	S	0	0	Cloudy	
Phœnix, Arizona					58	14.4	36	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	22	— 5.6	48	N	24	10.7		8cs	0	NW		0	0	Cloudy	
Pioche, Nevada	24.21	614.9	29.98	761 5	46	7.8	33	SW	1	0.4		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.19	741.4	30.00	762.0	51	10.6	86	S	8	3.6			10n		S	0.11	2.8	Light rain	
Port Huron, Michigan	29.12	739.6	29.77	756.1	51	10.6	93	SE	7	3.1			10n		Calm	0.58	14.7	Heavy rain	
Portland, Maine	30.46	773.7	30.52	775.2	46	7.8	84	N	4	1.8		5k	Fog	NW		0	0	Fair	
Portland, Oregon	30.16	766.1	30.26	768.6	53	11.7	93	N	5	2.2			10s		Calm	0.26	6.6	Cloudy	
Prescott, Arizona	24.93	633.2	30.29	769.4	44	6.7	42	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	30.03	762.7	30.05	763.3	76	24.4	76	NE	6	2.7		0	0			0	0	Clear	
Red Bluff, California	29.63	752.6	29.99	761.7	63	17.2	42	NW	6	2 7		0	0			0	0	Clear	
Rochester, New York	29.47	748.5	30.08	764.0	53	11.7	60	S	22	9.8			10s		S	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.60	751.8	30.16	766.1	56	13.3	90	N	5	2.2		Haze	8s		Calm	0	0	Cloudy	
Sacramento, California	29.90	759.4	29.98	761.5	58	14.4	47	NE	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.42	747.3	29.99	761.7	51	10.6	86	W	8	3.6			10s		W	1.54	39.1	Cloudy	
St. Marks, Florida	30.08	764.0	30.09	764.3	68	20.0	90	Calm	0	0		0	2s		SE	0	0	Fair	
St. Paul, Minnesota	29.05	737.9	29.88	758.9	44	6.7	92	W	1	0.4			10s		Calm	0.02	0.5	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.81	655.6	30.14	765.5	47	8.3	48	SE	4	1.8		2c	0	Calm		0	0	Clear	
San Antonio, Texas	29.46	748.3	30.00	762.0	58	14.4	94	NE	4	1.8		0	0			0	0	Clear	
San Diego, California	29.98	761.5	30.05	763.3	64	17.8	83	N	2	0.9			10s		NW	0	0	Cloudy	
Sandusky, Ohio	29.11	739.4	29.77	756.1	55	12.8	87	S	26	11.6			10ks		S	0.10	2.5	Threatening	
Sandy Hook, New Jersey	30.36	771.1	30.38	771.6	59	15.0	70	SE	20	8.9			10s		SE	0	0	Threatening	
San Francisco, California	29.92	760.0	29.99	761.7	57	13.9	81	W	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.39	594.1	29.93	760.2	42	5.6	11	NE	8	3.6		Haze	0			0	0	Clear	
Savannah, Georgia	30.03	762.7	30.12	765.0	67	19.4	90	Calm	0	0		5c	Sm'e	SW		0.09	2.3	Fair	
Shreveport, Louisiana	29.95	760.7	30.18	766.6	54	12.2	100	Calm	0	0			Fog		Calm	0.73	18.5	Foggy	
Smithville, North Carolina	30.15	765.8	30.19	766.8	71	21.7	75	E	18	8.0		10cs	0	SW		0	0	Cloudy	
Springfield, Massachusetts	30.27	768.8	30.41	772.4	45	7.2	76	SE	2	0.9			10s		SE	0	0	Cloudy	
Stanwix, Arizona																			
Stockton, Texas					59	15.0	76	S	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass	30.45	773.4	30.50	774.7	53	11.7	66	SE	8	3.6		1k	0	SE		0	0	Clear	
Toledo, Ohio	29.03	737.3	29.68	753.9	55	12.8	80	SE	16	7.2			10s		SE	0.07	1.8	Threatening	
Tucson, Arizona	27.65	702.3	30.20	767.1	62	16.7	61	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.08	764.0	30.11	764.8	73	22.8	73	SE	8	3.6		8c	0	W		0	0	Fair	
Umatilla, Oregon	29.85	758.2			52	11.1	86	E	6	2.7		0	0			0	0	Clear	
Vicksburg, Mississippi	29.92	760.0	30.19	766.8	58	14.4	93	NW	2	0.9		0	0			0.63	16.0	Clear	
Virginia City, Montana	24.37	619.0	29.85	758.2	46	7.8	69	SW	16	7.2			10s		NW	0	0	Cloudy	
Visalia, California	29.64	752.8	30.01	762.2	58	14.4	64	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	30.14	765.5	30.26	768.6	56	13.3	77	E	4	1.8			10s		SW	0	0	Cloudy	
Wickenburg, Arizona					51	10.6		W				0	0			0	0	Clear	
Wilmington, N. Carolina	30.09	764.3	30.17	766.3	64	17.8	83	E	2	0.9		10c	Fog	W	E	0	0	Cloudy	
Winnemucca, Nevada	25.79	655.0	30.15	765.8	36	2.2	53	NE	9	4.0		0	0			0	0	Clear	
Wood's Holl, Mass	29.45	748.0	30.50	774.7	54	12.2	55	SE	8	3.6		0	5s		SE	0	0	Fair	
Yankton, Dakota	28.71	729.2	30.04	763.0	34	1.1	84	Calm	0	0		0	1s		W	0	0	Clear	
Yuma, Arizona	29.82	757.4	29.99	761.7	63	17.2	40	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	30.27	768.8	30.32	770.1	22.0	—5.6	93	S	5	2.2		2c	0	SE		0.01	0.3	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.93	760.2	29.95	760.7	80	26.7	78	Calm	0	0		2cs	2ks	Calm	Calm	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	80	26.7	82	Calm	0	0		5c	2s	NE		0.07	1.8		James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	84	28.9		SE			1					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					87	30.6	92	E				4ck	4ks	NE		0.75	19.1		G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.80	756.9	29.82	757.4	82	27.8	83	SE				5c							L. V. Bigard.
Paramaribo, D. Guiana, S. A.			29.99	761.7	83	28.3	79	E			2	4k	6ks	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			66.2	19.0	82	Calm			0	5cs	3s			0.23	5.8	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.00	762.0	62	16.7	57	13.9	81	SW	4	1.8			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.24	768.1			70	21.1	80	NW	6	2.7			3			0.36	9.1			D. clouds	
Navy Yard, Portsmouth, N.H	30.49	774 4	60	15 6	44	6.7	84	W			1					0	0			Bright	
Naval Hospital, Yokohama, Japan	30.05	763.3	69.5	20.8	62	16.7	91	Calm			0		2k;hz		N	0	0			Fair	
Adams, Montevideo, Uruguay	29.91	759.7	66	18.9	62	16.7	83	W			1		9		W	Heavy	Heavy	None		D. clouds	
Alert, Vladivostok	30.21†	767 3†	58	14.4	58	14.4	76	ESE			1		0							Blue sky	
Alliance, Constantinople, Turkey	29.89	759.2	66	18.9	64	17.8	94	SSE			2		10		S&E					Overcast	
Ashuelot, Ta-koo, China	30.03	762 7	75	23.9	70	21.1	61	S			3		2							Hazy	
Canonicus, New Orleans, La	30.13	765.3	49	9.4	65	18.3	89	N			3		10		N					Cloudy	
Colorado, New York, N. Y	30.46	773.7	61	16.1	55	12.8	68	E	6	2.7			10		SSE					Overcast	
Despatch, Beikos Bay, Bosphorus	29.88	758.9	81	27.2	67	19.4	84	SW			2		10		SW					Rainy	
Franklin, Norfolk, Va	30.55	776.0	63	17.2	64	17.8	94	NE	1	0.4			10		NE	0	0			D. clouds	
Frolic, N. 17° 49′, W. 46° 57′	30.09	764.3	85	29.4	87	30.6	80′	NE			3		5kn		Calm	Blank	Blank	Smooth		D. clouds	
Gettysburg, Naples, Italy	29.75‡	755.6‡			68	20.0	100	S			0–1		5		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 5° 55′, E. 80° 40′	29.93	760.2			86	30.0	76	WSW			2		8		S&W	0	0	Smooth	S&W	Hazy	
Lackawana, Esquimault, B. C	30.25	768.3			47	8.3	92	Calm			0		4		NW					D. clouds	
Marion, Smyrna, Turkey	29.80	756.9	74	23.3	74	23.3	68	SSE			2		1		SSE	Blank	Blank			D. clouds	
Michigan, Lake Michigan	29.34	745.2	65	18.3	52	11.1	93	ESE			3		10		ESE					Raining	
Monocacy, Hakodadi, Japan	29.98	761.5	60	15.6	55	12.8	80	Calm			0		0			0	0	Smooth		Blue sky	
Monongahela, N. 35° 41′, W. 54° 42′	29.96	761.0	69	20.6	69	20.6	95	NE			4–5		kn			Light	Light	Rough	N&E	Squally	
New Hampshire, Port Royal, S. C	30.29	769.4			67	19.4	95	Calm	0	0			5		NE					D. clouds	
Omaha, Valparaiso, Chili	30.10	764 5	62	16.7	59.5	15.3	76	WNW	2	0.9			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.08†	764.0†	70	21.1	68	20.0	87	SSE			2		10					Long	W	Hazy	
Ossipee, Newport, R. I	30.51	774.9	63	17.2	56	13.3	63	ESE			3		8		ESE					D. clouds	
Palos, Shanghai, China	30.23	767.8	65	18.3	63	17.2	72	ESE			1–2		2		Calm	0	0			Clear	
Pensacola, Mare Island, Cal	30.07	763.8			63	17.2	83	Calm			0		0			0	0			Clear	
Plymouth, Norfolk, Va	30.52	775.2	66	18.9	63	17.2	83	SE			1		9		NW					Cloudy	
Ranger, Nagasaki, Japan	30.27	768.8			64	17.8	73	NE			1		1		Calm	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	30.00	762.0			75	23.9	90	ENE			2		10		NW					Thunder; lightn'g	
Santee, Annapolis, Md	30.34	770. 6	62	16.7	60	15.6	76	SE			6		10		SW	0	0			Cloudy	
St. Louis, League Island, Pa	30.24	768.1	53	11.7	59	15.0	76	ENE	3	1.3			10		SE	0	0			Overcast	
Tennessee, Yokohama, Japan	30.04	763.0	69	20.6	67	19.4	79	W	2	0.9			1			0	0	Smooth		D. clouds	
Trenton, Marseilles, France	29.80	756.9	64	17.8	62	16.7	100	N	38	17.0			8		N&E	0.1	3.			Squally	
Vandalia, Smyrna, Turkey	29.86	758.4	77	25.0	77	25.0	61	W			1		9		Calm					D. clouds	
Wabash, Boston, Mass	30.46	773.7	51	10.6	48	8.9	85	Calm	0	0			8		Calm	0	0			Foggy	
Wyoming, Washington, D. C	30.54†	775.7†	62	16.7	58	14.4		Calm			0		1							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 32° 45′, E. 134° 08′			30.35*	770.9*	69	20.6	75	Calm			0		2		Calm	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 00′, W. 177° 08′			30.03†	762.7†	70	21.1		SW			3		10		WSW	Smooth	SE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N 29° 40′ W. 165° 20′			29.98	761.5	76	24.4	81	WSW			2–3		5		WSW	Strong	NW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsc.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr.	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			30.45*	773.4*	58	14.4		N			6		8		N			Hazy	Captain Sargent.
S. S. Ohio, Liverpool			30.34	770.6	64	17.8	78	NNE			2				NNE				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richa r dson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.14	765.5	75	23.9	77	SE	5	2.2		2c	1k	SW				Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 9, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			29.87	758.6	71.2	21.8	67	E			2		2			0	0	Fair	Michel.
Algiers			29.78	756.4	59.4	15.2	87	NNE			4		10			0.091	2.3	Covered	Peter.
La Calle			29.71	754.7	55.8	13.2	88	WSW			3		10			0.169	4.3	Covered	Fleury.
Tunis			29.62	752.4	61.2	16.2	81	W			3		10			0.071	1.8	Covered	Jacques.
Sfax																			Husson.
Saida			29.82	757.3	53.8	12.1		NNW			3		6			0	0	Cloudy	Millot.
Tebessa			29.74	755.3	53.4	11.9		SW			3		9			0	0	Covered	Bourgeois.
Geriville			29.79	756.6	58.1	14.5	61	NW			4		3			0	0	Pretty fair	Lemaillot.
Laghouat			29.82	757.4	68.0	20.0	55	W			2		4			0	0	Cloudy	François.
Biskra			29.81	757.2	74.1	23.4	55	NW			2		10			0	0	Covered	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.26	743.3	29.52	757.4	49.1	9.5	56	NE			5		10			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.13	740.0	29.91	759.8	44.6	7.0	77	W			1		10			0	0		Dr. Wierzbiski.
Eperies	28.90	734.0	29.78	756.5	46.8	8.2	66	N			2		10k;s		Calm	0.126	3.20		Julius Mikolik.
Gratz	28.65	727.7	29.91	759.8	48.7	9.3	59	NW			4		7			0	0		Andreas Rospini.
Hermannstadt	28.21	716.5	29.63	752.6	46.6	8.1	86	NW			1		10			0.031	0.80		Prof. Reissenberger.
Kremsmünster	28.61	726.6	29.98	761.4	42.4	5.8	82	WSW			2		7			0.118	3.0		Prof. C. Wagner.
Lemberg	28.76	730.6	29.76	755.8	46.4	8.0	73	NW			1		9			0	0		Dr. T. Stanecki.
Pola	29.58	751.2	29.69	754.1	54.5	12.5	40	ENE			7		8cs			0.139	3.52		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.48	748.8	29.76	756.0	42.8	6.0	100	N			2		10			0.449	11.40		Karl Stancel.
Trieste	29.66	753.3	29.76	755.9	54.0	12.2	57	ENE			2		4			0	0		P. Busin.
Vienna	29.24	742.8	29.95	760.8	48.2	9.0	51	NNW			3		8			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 384.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.63	727.3	30.16	766.1	49.8	9.9	37	N			3		4			0	0		
Brussels	30.02	762.4	30.22	767.6	51.3	10.7	58	N			4		1		NE	0	0		Royal Observatory.
Furnes	30.20	767.0	30.22	767.6	53.8	12.1	68	NNE			2		7			0.088	2.1		
Maeseyck	30.07	763.6	30.19	766.9	50.9	10.5		NNE			4		2			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	30.16	766.1	30.26	768.6	53.0	11.7		W	6	2.7			9			0.020	0.51	Drizzling	W. Boswell.
Ardrossan	30.32	770.1	30.33	770.4	53	11.7		SW			2		8					Overcast	William McNeil.
Armagh, Observatory			30.39	771.9	51.6	10.9		NW	2	0.9			10					Overcast	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.38	771.6	50.4	10.2		WNW	9	4.0			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.42	772.7	51.4	10.8		Calm			0		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.93	760.2	30.32	770.1	48.6	9.2		NW			1		10			0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	86	30.0		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.33	770.4	52.0	11.1		N			2		7					D. clouds	H. Todd. [H.C.
Cardington			30.33	770.4	51.6	10.9		N			1		9					Overcast	John McLaren.
Chatham, School M. E	30.19	766.8	30.32	770.1	53.2	11.8		NE			2		4					Fine	Lt. W. G. Morris, R. E.
Dartmoor	28.89	733.8	30.39	771.9	51.0	10.6		E			3		2					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.33	770.4	30.36	771.1	52	11.1		NW			2		7					D. clouds	J. Mac Gowan.
Dover	30.24	768.1	30.27	768.8	53	11.7		NNE			5		5					½ clouded	J. Costello.
Eccles, (near Manchester)			30.35	770.9	51.8	11.0		N	0.4	0.2			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	30.16	766.1	30.39	771.9	54.0	12.2		NNE			2		3					D. clouds	The Staff.
Fort Napier, (Natal)	27.65	702.3	29.88	758.9	57.4	14.1		E			3		10					Raining	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.99	761.7	85	29.4		W			1		4					D. clouds	
Galway, Queen's College					56	13.3		E			4		5					Showery	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.73	755.1	29.77	756.1	72.5	22.5		W			4		0					Blue sky	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	30.11	764.8	30.32	770.1	51.2	10.7		SSW			3							Hazy	D. G. Maclean.
Great Yarmouth	30.28	769.1	30.29	769.4	53	11.7		N			3		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.15	765.8	30.32	770.1	51.3	10.7		NNE			2		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.00	764.3	30.31	769.9	53.5	11.9		NNE			2		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.40	772.1	57.0	13.9		N			4		2			0.2	5.	D. clouds	M. P. Moyle.
Holyhead	30.31	769.9	30.36	771.1	54	12.2		WNW			1		4					D. clouds	John Tilston.
Jersey	30.03	762.7	30.32	770.1	54.0	12.2		NE			5		6					D. clouds	J. Fisher.
Kew, Observatory			30.32	770.1	52.1	11.2		NNE	12	5.4			8kd					Threatening	The Staff.
Kingstown	30.39	771.9	30.41	772.4	52	11.1		NW			3		10					Gloomy	George Mitchell.
Leicester, Museum			30.33	770.4	48.0	8.9		N			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.55	750.6	29.63	752.6	72.0	22.2		SW			2		8					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	30.13	765.3	30.22	767.6	58	14.4		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.04	763.0	77.0	25.0		SE			2		10					Drizzling	C. S. Duncombe.
Nottingham, Observatory	30.17	766.3	30.36	771.1	50.1	10.1		NNW			1		10k		NNW	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.82	757.4	30.36	771.1	48.2	9.0		NNE			1		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.35	770.9	51	10.6		N			2		10					Overcast	F. Lucas
Plymouth	30.30	769.6	30.36	771.1	55.5	13.1		NNW			1		0					Blue sky	John Merrifield.
Roche's Point	30.39	771.9	30.42	772.7															W. Kennedy.
Saint Ann's Head	30.22	767.6	30.38	771.6	55	12.8		Calm			0		5					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			30.19	766.8	52.9	11.6		W	16	7.2			10					Drizzling	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.71	754.6	66.8	19.3		SE			2		10			Blank	Blank	Misty	Sergt. W. H. Lyne.
Sheffield	30.11	764.8	30.35	770.9	49.2	9.6		NNW			2		9			0	0	Gloomy	W. F. Cooper.
Silloth Rectory	30.31	769.9	30.34	770.6	56.4	13.6	57	NE			2		1			0.075	1.91	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					50.7	10.4		NW			1		7					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			30.20	767.1	56	13.3		WSW			2		10					Overcast	John Smith.
Stratfield Turgiss	30.12	765.0	30.34	770.6	53.3	11.8		N			1		2					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.17	766.3	54	12.2		WNW			2		10					Raining	John Trotter.
Truro, Royal Institution			30.39	771.9	59	15.0		N			4		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.43	772.9	56.3	13.5		NE	2	0.9			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		W			3		5			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.18	766.6	30.22	767.6	63.0	17.2	45	WNW	10	4.5		1	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.32	770.1	47.0	8.3	87	S			2		10n			0.02	0.5	Rainy	Francis Abbott, F.R.A.S
Leith, Restalrig Park			30.30	769.6	54.5	12.5		W			2	10cs				0	0	Hazy	Andrew Gibb.
Mauritius, Observatory	30.04	763.0	30.23	767.8	74.3	23.5	62	ESE	20.5	9.2		4	2	SE	ESE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.18	766.6	30.27	768.8	51.1	10.6	68	S	16	7.2			6			0.02	0.5	Boisterous	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.21	767.3	54	12.2		WSW			4		10			0.1	3.		J. Youngclause.
North Unst, (Shetland Is.)			29.98	761.5	50	10.0		W			6		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria				Capt. W. Watson
S. S. Batavia				Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine				Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine, N. 51° 28′, W. 34° 4′	2	SE	Foggy	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller, N. 48° 55′, W. 39° 0′	5	E	Drizzling	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2			65.8	18.8	92	NE			2		6cs;d		E	Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.03	762.8	30.08	764.0	44.1	6.7	60	NNW			4		1						
Fanöe	30.14	765.6	30.16	766.1	48.2	9.0	61	WSW			2		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.45	748.1	29.50	749.2	48.7	9.3	92	SW			6		10					Raining	
Thorshavn, (Faröe)	29.39	750.1	29.92	760.0	51.3	10.7	90	W			6		7						
Vestervig	29.93	760.2	30.10	764.5	49.6	9.8	74	SW			4		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.75	755.7	30.30	769.7	55.4	13	20	NE			4		5		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.10	764.5	30.21	767.3	58.3	14.6	72	N			2		2		N	0.016	0.4	Slightly cl'dy	Bouvarne, Director.
Avignon, Normal School	29.67	753.6	29.75	755.6	55.0	12.8	45	N			8		0			0	0	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.58	751.2	30.15	765.8	50.2	10.1	55	NE			3		8kn		NE	0.020	0.5	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.05	763.2	30.21	767.3	52.3	11.3	68	NE	19.2	8.6					ENE	0	0		Albert Cheux.
Beauvais	29.93	760.3	30.22	767.6	53.4	11.9	48	N			3		5		NE	0	0	Cloudy	Normal School.
Besançon	29.17	741.0	30.07	763.8	49.6	9.8	64	E			3		8		E	0.287	7.3	Very cloudy	Normal School.
Bourg-en-Bresse	29.15	740.3	30.06	763.5	50.2	10.1	52	NE			8		2ck		N	0.08	2.	Slightly cl'dy	Normal School.
Bourges, Normal School	29.52	749.7	30.08	763.9	51.4	10.8	65	N			4		8		NNE	6	0	Very cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.06	763.4	30.28	769.0	53.8	12.1	57	NE			4		4k		NE	0	0		The Staff.
Carcassonne, Normal School	29.54	750.4	29.96	761.0	52.8	11.3	45	W			6		5		W	0	0	Cloudy	Vateau, Director.
Caen	30.20	767.0	30.27	768.9	53.6	12	72	S			8		8		S	0.008	0.2	Very cloudy	Normal School.
Chartres, Normal School	29.59	751.5	30.15	765.9	56.8	13.8	60	N			3		9		SW	0	0		Leguin, Director.
Châlons-sur-Marne, N. Sch'l	29.84	758.0	30.17	766.2	52.7	11.5	57	N			3		5k		NW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.69	728.6	30.06	763.4	50.5	10.3	50	N			3		5		N	0.039	1.0	Cloudy	Alluard, Director.
Commercy, Normal School	29.26	743.1	30.15	765.8	49.1	9.5	56	NNE			4		5kn		NE	0	0	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	28.55	725.1	29.69	754.1	61.0	16.1	24	NW			4		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.98	761.4	30.19	766.9	56.1	13.4	53	SW			6		5		SE	0	0	Cloudy	Moullot, Director.
Le Mans, Normal School	29.89	759.1	30.20	767.0	54.9	12.7	55	NE			4		8		NE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.1	30.03	762.7	47.7	8.7	57	NNE			6		2		SW	0.205	5.20	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	30.21	767.4	30.31	769.9	58.3	14.6	47	N			2		8		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.29	744.0	29.95	760.6	50.2	10.1	79	NE			6		0			0.240	6.10	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.04	737.5	30.10	764.5	46.8	8.2	70	N			4		5		SW	0.12	3.	Partly cl'dy	Normal School
Nismes, Normal School	29.55	750.5	29.75	755.6	61.2	16.2	79	N			6		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.75	755.7	30.14	765.5	53.2	11.8	46	NE			6		8		NE	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.96	761.0	30.20	767.1	51.6	10.9	60	NE			1		9k		N	0	0	Almost cov.	National Observatory.
Privas	28.82	731.9	29.88	759.0	54.5	12.5	46	N			4		2		N	0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.17	766.2	30.20	767.0	55.4	13.0	55	NNE			5		10		NE	0	0	Covered	L. Decante, Director.
Rouen, Normal School	30.15	765.7	30.23	767.9	54.3	12.4	55	NW			2		10		N	0.307	7.8	Covered	F. Lucard, Director.
Tarbes, Normal School	29.07	738.4	30.15	765.7	53.6	12	58	W			2		2			0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.29	744.0	30.01	762.7	53.1	11.7	59	NNW			6		5		NE	0.08	2.	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.5	29.81	757.2	82.4	28										0.28	7.		L'Abbé Marchési.
Marseilles, Observatory			29.93	752.6	63.1	17.3	52	NW			2		0			0	0		The Staff.
Mont-Louis	24.71	627.7	30.03	762.7	33.8	1.0	55	NNW	14.9	6.66			5		NNW	0.091	2.3		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.91	759.7	30.19	766.7	51.3	10.7	64	NE			3		7		NE	Inap.	Inap.		Marié Davy, Director.
Perpignan			29.87	758.7	51.8	11.0	48	N	37.3	16.66			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.15	537.3			20.8	— 6.2		N			1		5					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.41	569.1			26.6	— 3.0		N			1		4			2.110	53.6	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.03	762.8	30.20	767.0	52.2	11.2	65	NE			2		10		NNE	0	0	Covered	E. Renou.
Toulouse, Observatory	29.37	746.1	30.10	764.5	51.3	10.7	44	NNW			6		4			0.016	0.4		The Staff.
Tours	29.98	761.5	30.18	766.5	55.4	13.0	59	NE			1		10		NNE	0	0		C. Marquet.
Versailles, (near Paris)			30.20	767.0	51.8	11.0	59	NE			2		9			0.005	0.12	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.01	762.2	30.04	762.9	63.0	17.2	95	ESE	6.0	2.7			1k			0	0	Fine	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,205.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 6:50, instead of 6:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.93	760.2	30.10	764.5	49.8	9.9	48	N			1		6			0.008	0.20		Prof. Arndt.
Breslau	29.46	748.3	29.99	761.8	43.3	6.3	83	NNW			2		4			0.126	3.20		Royal University Obs'y.
Carlsruhe	29.67	753.6	30.11	764.7	47.8	8.8	77	N			1		10			0.071	1.8	Rain;graupel	Albert Senz.
Cassel	29.64	752.8	30.25	768.3	49.6	9.8	49	N			4		4	NW		0	0		Dr. H. Möhl.
Crefeld	30.01	762.2	30.17	766.3	53.6	12.0	38	NE			3		3k			0.08	2.		Director Lose.
Emden	30.21	767.4	30.25	768.3	53.1	11.7	56	N			2		0			0.138	3.5		Prof. Prestel.
Frankfort on the Main	29.80	756.9	30.13	765.3	52.9	11.6	17	NNE			2		5			Inap.	Inap.		Physical Society.
Friedrichshafen	28.63	727.1	30.09	764.3	44.6	7.0	64	NE			7		3	ENE		0	0		M. Wilhelm.
Hamburg	30.10	764.4	30.17	766.2	48.4	9.1	58	NNE			4		4k	NNE		0	0	Fair	Captain F. Hegemann
Kiel	30.14	765.6	30.16	766.0	47.8	8.8	53	NW			1		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.75	755.6	29.82	757.4	48.9	9.4	61	N										Fair	Prof. E. Luther.
Köslin			29.98	761.6	46.4	8.0		N			2		2			0	0		H. Müller.
Leipsic, Observatory	29.72	754.8	30.15	765.7	49.1	9.5	53	NNE			2		8	NE		0.031	0.8		Prof. Bruhns.
Memel, Naval School	29.89	759.3	29.94	760.5	45.1	7.3	82	N			2		5s						Reinbrechtvon Skalweit.
Neufahrwasser	29.91	759.6	29.92	760.0	49.3	9.6	71	N			6		8			0.260	6.5		A. Lothes.
Posen	30.00	762.0	30.29	769.4	49.1	9.5	61	NW			3–4		8					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.57	751.0	30.13	765.2	48.6	9.2	48	NE			4		4	NE		0.303	7.69		Dr. Schur.
Stuttgart	29.15	740.3	30.11	764.7	44.2	6.8	67	NE			1		4	E				Light rain	Prof. Schoder.
Treves, (Trier)	29.50	749.4	30.03	762.7	52.7	11.5	37	NE			6		5			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.55	725.2	30.10	764.5	41.5	5.3	69	NNE			2		8		N	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.10	764.5	30.14	765.5	45.0	7.2	54	N			4		4					Fair	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.32	744.6	29.70	754.3	74.8	23.8		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The orignals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.79	756.7	29.84	758.0	84.1	28.9	77	WSW	24.0?	10.7?			0			0	0	Blue sky	
Deesa	29.40	746.7	29.87	758.7	87.0	30.6	50	WNW					0			0	0	Blue sky	
Bombay	29.80	756.9	29.84	757.9	82.7	28.2	79	WNW	14.0	6.3			6	SSW		0.10	2.5	D. clouds	
Poona	27.82	706.5	29.83	757.6	75.6	24.2	88	NE					10		E	1.01	25.7	Thunder-storm	
Lahore	29.15	740.3	29.89	759.2	81.0	27.2	62	Calm	1.7	0.8			0			0	0		
Belgaum	27.35	694.7	29.90	759.6	73.4	23.0	84	W	11.0	4.9			8	SSW	SW	0.08	2.0	D. clouds	
Bangalore																			
Roorkee	28.97	735.8	29.87	758.7	75.8	24.3	86	Calm	0.4	0.2						0.11	2.8		
Agra	29.26	743.2	29.83	757.6	77.8	25.4	82	N					6		NE	0	0		
Trichinopoly																			
Nagpur	28.80	731.4	29.85	758.1	76.6	24.8	93	Calm	3.5	1.6			9			1.29	32.8	Gloomy	
Madras																			
Lucknow	29.46	748.4	29.84	757.9	78.3	25.7	86	Calm	4.5	2.0			5		W	0	0	D. clouds	
Allahabad	29.53	750.5	29.84	758.0	77.7	25.4	89	Calm	3.2	1.4			9			1.56	39.6	D. clouds	
Patna	29.67	753.5	29.85	758.2	80.1	26.7	91	E	0.6	0.3			10	E	NE	0.04	1.0	Overcast	
Hazaribagh	27.84	707.0	29.86	758.3	76.6	24.8	84	Calm	5.9	2.6			8			0	0		
Cuttack	29.77	756.1	29.85	758.2	84.5	29.2	71	S	4.4	2.0						0	0	Blue sky	
Calcutta (Allpore)	29.85	758.2	29.87	758.8	81.2	27.3	83	SW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.48	748.8	29.88	758.8	76.4	24.7	86	E	1.8	0.8			5		W	0	0	D. clouds	
Chittagong	29.81	757.2	29.90	759.6	81.4	27.4	86	S	2.6	1.2			0			0	0	Blue sky	
Sibsagar	29.62	752.2	29.96	761.0	70.8	21.6	95	ENE	3.0	1.3			10			1.49	37.8	D. clouds	
Rangoon																			
Jubbulpore	28.47	723.2	29.84	757.9	80.0	26.7	83	NW	2.6	1.2			5	NW	NW	0.06	1.5	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.91	556.4	29.77	756.2	23.9	— 4.5	50	E			2		2	N		0	0		Ab. Dom. Morgini.
Stelvio	21.90	556.2	29.78	756.5	17.6	— 8.0		NNE			2		9	N		0.098*	2.5*		Signora Ernesta Manfredi.
Udine	29.35	745.4	29.76	755.8	57.2	14.0	31	E	3.8	1.7			7			0.173	4.4		Prof. Giovanni Clodig.
Padua	29.62	752.4	29.73	755.2	56.7	13.7	39	E	10.5	4.7			10	SW		0.051	1.3		Prof. Dott. Lorenzoni.
Vicenza	29.54	750.3	29.73	755.2	57.4	14.1	34	SE	3.1	1.4			3	W		0	0		Conte Alm. Da Schio.
Verona	29.50	749.2	29.72	754.8	62.6	17.0	33	E	9.8	4.4			10			0	0		Dott. B. Bertoncelli.
Bergamo	28.38	720.9	29.69	754.2	57.2	14.0	42	WNW			1		1			0	0		Prof. Trionfini Carlo.
Domodossola	28.76	730.5	29.79	756.0	56.7	13.7	21	N			8		1			0	0		Prof. Giuseppe Calza
Milan	29.12	739.7	29.64	752.8	58.5	14.7	58	W			2		3	WNW		0	0		Ab. Gio. Capelli.
Pavia	29.38	746.2	29.73	755.2	56.7	13.7	44	E			6		0			0	0		Prof. Gio. Cantoni.
Moncalieri	28.84	732.5	29.76	755.6	56.8	13.8	35	SE	3.8	1.7			1	SW		0	0		Prof. P. F. Denza.
Mondovi	27.82	706.7	29.74	755.4	52.5	11.4	30	NW			4		1	N		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.45	747.9	29.67	753.5	62.2	16.8	10	NW			6		3			0	0		Prof. L. Vassallo.
Genoa	29.49	749.1	29.66	753.4	64.4	18.0	13	N	8.1	3.6			2	NE		0.012	0.3		Prof. G. M. Garibaldi
Placenza	29.48	748.8	29.74	755.3	56.7	13.7	43	SE	9.8	4.4			6			0	0		Dott. G. Manzi.
Parma	29.46	747.2	29.73	755.2	55.8	13.2	39	ESE			6		2			0.075	1.9		Prof. P. Pigorini.
Florence	29.37	746.1	29.63	752.6	56.8	13.8	38	NE			8		8	NE		0	0		Cav. F. Meucci.
Leghorn	29.47	748.5	29.55	750.6	58.6	14.8	34	NE	26.2	11.7			8			0	0		Prof. P. Monte.
Siena	28.37	720.5	29.57	751.1	50.9	10.5	47	NE	28.6	12.8			10	NE		0	0		Prof. L. Toscani.
Urbino	29.15	715.0	29.71	754.7	49.1	9.5	94	NE			4		10			1.413	35.9		Prof. P. Serpieri.
Pesaro	29.61	752.2	29.66	753.4	54.9	12.7	56	NE	62.2	27.8			9	NE		0.472	12.0		Prof. Luigi Guidi.
Ancona	29.56	750.9	29.67	753.6	53.8	13.2	60	E			6		10			0.850	21.6		Prof. F. DeBosis.
Grosseto	29.45	748.1	29.56	750.9	54.9	12.7	58	NNE			6		8	SE		0.055	1.4		Avv. P. Ponticelli.
Rome	29.30	744.3	29.48	748.7	55.4	13.0	75	NNE	11.9	5.3			10			1.378	35.0		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.29	743.9	29.48	748.9	60.1	15.6	81	N			4		10	SSW		2.449	62.2		Prof. L. Palmieri.
Lecce	29.21	742.0	29.46	748.3	68.7	20.4	70	S	10.5	4.7			8	S		0.449	11.4		Prof. C. De Giorgi.
Cosenza	28.72	729.5	29.607	751.77	60.6	15.9	88	SSE	4.3	1.9			10			1.079	27.4		Prof. F. D. Conti.
Cagliari	29.11	739.5	29.30	744.3	59.0	15.0	68	NW			6		8	N		0.028	0.7		Prof. A. Pacinotti.
Riposto, (Sicily)	29.35	745.5	29.39	746.6	70.5	21.4	48	E			4		9			0	0		Prof. F. Cafiero.
Palermo	29.26	743.2	29.51	749.5	62.8	17.1	59	WSW	11.9	5.3			10			0.106	2.7		Prof. G. Cacciatore.
Caltanissetta	27.62	701.5	29.53	750.0	58.1	14.5	77	WSW			6		10	N		0.366	9.3		Prof. A. Pagani.
Syracuse	29.49	749.0	29.56	750.9	70.2	21.2	57	WSW			6		10	WSW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	28.98	736.2	29.54	750.3	56.8	13.8	86	NNW	3.1	1.4			10			1.924	26.0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *160.0 m. m., or 6.301 in., unmelted snow.

JAPANESE SERIES.

Furnished by the cooperation of the Imperial Meteorological Observatory, and the Imperial University of Tokoi, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.18	766.6	30.28	769.0	61.1	16.2	93	Calm	0	0		0	0			0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.19	589.1	30.27	768.7	48.6	9.2	82	NW	0.5	0.21		0	2k			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.25	768.4	30.25	768.4	55.8	13.2		E			2					0.181	4.6		
Groningen	30.16	766.0	30.21	767.4	50.9	10.5		NW			2					0.047	1.2		
Helder	30.23	767.7	30.23	767.7	51.1	10.6		NE			1					0	0		
Hellevoetsluis			30.23	767.8	59.5	15.3	66	S			1								
Utrecht	30.19	760.9	30.24	768.1	54.0	12.2	47	N			2		5			0	0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.07	763.7	30.12	765.1	46.8	8.2	75	SSE	10.1	4.5			4			0.386	9.8		
Brönö	29.60	751.7	29.64	752.7	45.3	7.4	66	W	20	9			10			0	0		
Christiania	29.84	757.8	29.98	761.6	48.7	9.3	38	SSW	7	3			7			0.004	0.1		
Tromsö	29.40	746.7	29.44	747.8	32.0	0.0	89	WSW	4	2			9			0.197	5.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.18	766.5	30.37	771.3	70.2	21.2	89	SE	6.9	3.1			2			0	0		Dr. J. A. Sampaio
Campo Major	28.93	734.7	29.94	760.4	69.1	20.6	35	NNE	10.5	4.7			0			0	0		Dr. A. M. R. dos Santos
Funchal, (Madeira)	29.98	761.4	30.05	763.2	73.2	22.9	68	SW	6.9	3.1			1			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.60	751.8	29.95	760.8	68.9	20.5	38	NE	24.8	11.1			0			0	0		The Staff.
Ponta Delgada, (Azores)	30.27	768.9	30.34	770.7	70.2	21.2	67	NE	4.3	1.9			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.40	746.8	29.83	757.6	48.4	9.1	62	NNW	9	4			7						Astronomical Obs.
Wilna	29.32	744.8	29.75	755.6	43.2	6.2	88	WNW	2	1			10					Raining	Astronomical Obs.
Dorpat	29.48	748.8	29.73	755.1	41.9	5.5	83	NW	4	2			10						Physical Cabinet.
St. Petersburg	29.61	752.0	29.62	752.4	41.9	5.5	79	WNW	11	5			9						Central Physical Obs.
Kuopio	29.26	743.1	29.58	751.4	37.4	3.0	74	WNW	13	6			7					Raining	Ch. Forsten.
Kieff	29.11	739.4	29.74	755.5	51.6	10.9	75	SE	4	2			10						Physical Cabinet
Nikolaiev	29.71	754.7	29.78	756.5	58.6	14.8	70	E	4	2			10						Kurdakof.
Kertch	29.90	759.4	29.92	759.9	64.6	18.1	89	SE	2	1			7						Lagorio.
Moscow	29.22	742.2	29.77	756.1	46.8	8.2	63	S	7	3			8						Meteorological Obs.
Lugan	29.64	752.9	29.84	758.0	54.9	12.7	78	WSW	9	4			8			Blank	Blank		Meteorological Obs.
Archangel	29.38	746.2	29.40	746.7	38.8	3.8	87	W	18	8			10						Ogorodnikof.
Tiflis	28.70	728.9	30.07	763.8	73.2	22.9	53	Calm	0	0			5						Physical Observatory.
Astrakhan	30.13	765.2	30.04	763.1	59.5	15.3	80	SSE	22	10			7			Blank	Blank		Sebastianof.
Kasan	29.71	754.7	29.98	761.6	46.8	8.2	71	SSE	9	4			10						Physical Cabinet.
Orenburg	29.69	754.0	30.06	763.4	57.6	14.2		E	9	4			0						Tschernischei.
Ekaterinburg	29.16	740.7	30.13	765.3	39.4	4.1	50	WSW	18	8			5						Meteorological Obs.
Nukuss	30.13	765.4	30.37	771.5	45.0	7.2	51	NE	4	2			1						
Kasaly																			Bobrof.
Tashkend	28.73	729.7	30.49	774.4	46.4	8.0	92	Calm	0	0			10						Michelson.
Barnaul	29.96	761.0	30.51	774.9	35.1	1.7	55	NW	0	0			0						Meteorological Obs.
Yeniseisk	30.12	765.0	30.26	768.7	35.8	2.1	85	WSW	2	1			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.97	761.3	30.11	764.9	49.3	9.6	28	NNE	40	18			3						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					31.1	— 0.5	77	Calm	0	0			1						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.69	703.2	29.88	759.0	61.2	16.2	40	NE	29.8	13.33		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.8	30.00	761.9	75.1	23.9	87	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.75	755.6	29.85	758.1	70.7	21.5	40	NNE	18.5	8.28		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.91	759.6	78.8	26.0	77	SE	0	0		5kn	5kn	E	E	0.935	23.75	Overcast	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.52	749.8	29.56	750.8	35.6	2.0		SW			2		10			0	0		
Umea	29.50	749.2	29.55	750.5	40.6	4.8	74	WSW			2		7			0	0		
Hernosand	29.63	752.6	29.68	753.9	46.0	7.8	64	NW			4		9			0	0		
Stockholm	29.70	754.4	29.88	758.9	43.3	6.3	81	WNW			4		3			0.028	0.7		
Wisby	29.85	758.1	29.91	759.6	42.8	6.0	74	NNW			4		5			0.024	0.6		
Sub-Series.																			
Upsala	29.81	757.1	29.88	759.0	45.7	7.6	54	WNW	7.4	3.3			2	NNW		0.006	0.15		Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.51	724.1	29.95	760.7	48.7	9.3	47	NNE			8		2			0.063	1.6	Clear	The Observatory.
Zurich	28.41	721.7	30.09	764.3	42.1	5.6	66	NW			2		8			0.008	0.2	Rain & snow	The Observatory.

NOTE.—For Geneva the corresponding deductures from the normal values are: Barometer, —2.2 mm; Thermometer, —4.9 cent.; Relative Humidity, per cent. —23

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the cooperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.75	755.7	66.6	19.2	86	SE	3	1.5			10		SW	0.709	18.0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.67	753.6	72.3	22.4		SE			1		5						B. Stefanidès.
Valona			29.63	752.5	68.2	20.1		S			3		10			1.77	45.	Covered	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.79	756.7	29.90	759.5	96.4	35.8	30?	ENE			2		0			0	0	Blue sky	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Stations	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	30.46	773.7	30.53	775.4	41.8	5.4	81	Calm	0	0			7						Hon. J. Ferguson.
Brockville, Ontario			30.04	763.0	55	12.8		S	5	2.2			8s		SW	0.23	5.8	Cloudy	W. R. Bigg.
*Chatham, N. B.			30.52	775.2	38	3.3	92	Calm	0	0		2c	2ks	Calm	Calm	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.57	776.5	43	6.1	85	SE	3	1.3		2c	0			0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.84	757.9	30.04	763.0	52.0	11.1	89	SE			1		10s			0.308	7.82	Unsettled	James Smith, M. A.
Dalhousie, N. B.	30.50	774.7	30.53	775.4	42	5.6	78	E			1					0	0	Cloudy	H. A. Johnson.
Esquimault, B. C.	29.98	761.5	30.03	762.7	48.3	9.1	100	N					10			0.75	19.1	Rainy	W. H. Revis.
*Father Point, Quebec			30.39	771.9	45	7.2	68	SE	12	5.4			10s		S	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	30.47	773.9	30.54	775.7	42.1	5.6	83	E			3	5ck	0	SW		0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba			30.19	766.8	35	1.7	96	NW	3	1.3		2c	5s	Calm	N	0	0	Fair	James Stewart.
Goderich, Ontario	29.26	743.2	30.05	763.3	53.7	12.1	91	SW			2	10k	0	SW		0	0	Clearing	H. J. Strang, M. A
Granton, Ontario	28.93	734.8	30.03	762.7	49	9.4	93	S			1	1c	0	N		0.65	16.5	Clear	James Grant.
*Halifax, N. S.	30.39	771.9	30.53	775.4	40	4.4	91	NE	3	1.3		5cs	0			0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.69	754.1	30.06	763.5	52.9	11.6	86	W			4	4c	0	W		0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.55	776.0	30.58	776.7	42	5.6	66	NE			3		10n			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.71	754.6	30.07	763.8	56	13.3	91	S	10	4.5			10ks			0.17	4.3	Cloudy	S. Woods, M. A
*Montreal, Quebec	29.91	759.7	30.12	765.0	49	9.4	94	SE	8	3.6			10n		Calm	0.75	19.1	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.26	743.2	29.95	760.7	50	10.0	89	W	14	6.3			10n		W	0.93	23.6	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.26	743.2	30.00	762.0	52.7	11.5	86	W			1	0	8ks			0.70	17.8	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.38	746.2	30.08	764.0	49	9.4	85	W	5	2.2		10k	0	W		0.50	12.7	Fair	H. Morgan.
Port Hastings, N. S.	30.49	774.4	30.54	775.7	41.6	5.3		Calm	0	0						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.41	747.0	30.06	763.5	50	10.0	91	W	4	1.8		5k	0	W		0.31	7.9	Fair	M. Payne.
*Quebec, Quebec	29.97	761.2	30.30	769.6	44	6.7	84	NE	20	8.9			10n		NE	0.11	2.8	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.44	747.8	29.89	759.2	52	11.1	93	SE	6	2.7			10s		SE	0.55	14.0	Light rain	W. H. McIntyre.
St. John, N. B.	30.34	770.6	30.52	775.2	42	5.6	83	E	1	0.4		3c	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.28	743.7	29.98	761.5	51	10.6	78	NW	4	1.8		10k	0	W		0.52	13.2	Cloudy	K. Stewart.
Stayner, Ontario			29.97	761.2	50	10.0	82	SW	5	2.2			10n		W	0.56	14.2	Threatening	R. J. Cole.
Stratford, Ontario	28.73	729.7	30.00	762.0	49.4	9.7	90	SW	10	4.5			10s			0.993	25.23	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	30.58	776.7	30.61	777.5	43	6.1	81	NE	1	0.4		10cs	2ks			0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.67	753.6	30.05	763.3	52	11.1	86	SW	8	3.6		5ck	2s	W	W	0.99	25.1	Cloudy	Magnetic Observatory.
Windsor, N. S.	30.41	772.4	30.51	774.9	36.5	2.5	95	Calm	0	0		3c	0			0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					42.0	5.6	74	N					10			0	0	Fair	John Delany.

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain fall or melted snow in the past 24 hours. Inches.	Rain fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.79	756.7	30.02	762.5	55	12.8	100	S	4	1.8			10n		S	0.36	9.1	Light rain	
Alpena, Michigan	29.35	745.5	30.00	762.0	45	7.2	92	W	3	1.3		0	8s		W	1.43	36.3	Fair	
Atlantic City, New Jersey	30.03	762.7	30.05	763.3	60	15.6	100	W	6	2.7			10n		Calm	1.53	38.9	Light rain	
Augusta, Georgia	29.99	761.7	30.18	766.6	55	12.8	93	N	3	1.3			Fog		Calm	0.27	6.9	Foggy	
Baltimore, Maryland	30.07	763.8	30.12	765.0	56	13.3	87	W	3	1.3		5ck	Sm'e	W	Calm	1.38	35.1	Fair	
Barnegat, New Jersey	30.01	762.2	30.03	762.7	61	16.1	94	NW	12	5.4			10n			2.63	66.8	Light rain	
Bismarck, Dakota	28.38	720.8	30.10	764.5	38	3.3	81	N	3	1.3			10s		N	0	0	Cloudy	
Boise City, Idaho	27.27	692.6	29.90	759.4	46	7.8	85	Calm	0	0		2k	0	E		0	0	Fair	
Boston, Massachusetts	30.12	765.0	30.28	769.1	52.5	11.4	89	SE	19	8.5			10n		S	0.05	1.3	Heavy rain	
Brackettville, Texas	28.93	734.8	29.94	760.5	72	22.2	80	SE	8	3.6			10ks		SW	0	0	Cloudy	
Breckenridge, Minnesota	29.08	738.6	30.11	764.8	36	2.2	100	N	9	4.0			10s		NE	0	0	Cloudy	
Brownsville, Texas	30.04	763.0	30.10	764.5	72	22.2	90	Calm	0	0		0	Sm'e			0	0	Clear	
Buffalo, New York	29.33	745.0	30.01	762.7	53	11.7	86	W	7	3.1		0	1ks		W	0.13	3.3	Clear.	
Burlington, Vermont	29.89	759.2	30.15	765.8	53	11.7	93	S	2	0.9			10n		Calm	0.09	2.3	Light rain	
Cairo, Illinois	29.76	755.9	30.16	766.1	54	12.2	79	S	5	2.2		2ck	0	Calm		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.91	683.5	30.40	772.1	50	10.0	51	Calm				0	0			0	0	Clear.	
Campo, California	27.46	697.5	30.03	762.7	38	3.3	80	E	4	1.8		0	0			0	0	Clear.	
Cape Hatteras, N. Carolina	30.03	762.7	30.04	763.0	69	20.6	90	SE	14	6.3		5k	2s	SW	SW	0.32	8.1	Fair	
Cape Henry, Virginia	30.03	762.7	30.06	763.5	63	17.2	89	NW	16	7.2			10s		NW	1.03	26.2	Cloudy	
Cape Lookout, N. Carolina	30.10	764.5	30.11	764.8	67	19.4	90	N	6	2.7			10ks		SW	0.85	21.6	Cloudy	
Cape May, New Jersey	30.04	763.0	30.06	763.5	61	16.1	94	NW	22	9.8			10s		NW	2.03	51.6	Cloudy	
Charleston, South Carolina	30.09	764.3	30.16	766.1	65	18.3	83	N	4	1.8		0	8s		N	0.01	0.3	Fair	
Cheyenne, Wyoming	24.22	615.2	30.16	766.1	26	— 3.3	88	NW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.33	745.0	30.03	762.7	46	7.8	100	W	3	1.3		0	Fog		Calm	0.03	0.8	Foggy	
Cincinnati, Ohio	29.43	747.5	30.08	764.0	48	8.9	92	S	3	1.3			Fog		S	0.07	1.8	Dense fog	
Cleveland, Ohio	29.41	747.0	30.14	765.5	50	10.0	78	SW	12	5.4		2k	0	S		0.03	0.8	Fair	
Concho, Texas					58	14.4	53	SE	14	6.3		0				0	0	Clear	
Corsicana, Texas	29.65	753.1	30.12	765.0	58	14.4	87	S	5	2.2		0	0			0	0	Clear	
Davenport, Iowa	29.36	745.7	30.00	762.0	48	8.9	85	E	8	3.6			10n		Calm	0.10	2.5	Light rain	
Denison, Texas	29.34	745.2	30.13	765.3	58	14.4	81	SE	7	3.1		0	0			0	0	Clear	
Denver, Colorado	24.99	634.7	30.21	767.3	36	2.2	61	SE	4	1.8		0	2s		NW	0	0	Clear	
Detroit, Michigan	29.38	746.2	30.06	763.5	48	8.9	92	SW	5	2.2		0	8ks		SW	0.15	3.8	Fair	
Dodge City, Kansas	27.53	699.2	29.86	758.4	44	6.7	84	N	14	6.3		0	2s		N	0	0	Clear.	
Dubuque, Iowa	29.30	744.2	30.01	762.2	42	5.6	83	W	1	0.4			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.35	745.5	30.03	762.7	46	7.8	92	E	6	2.7			10s		E	0.19	4.8	Cloudy	
Eagle Pass, Texas	29.28	743.7	30.01	762.2	69	20.6	90	NE	3	1.3		1cs	0	S		0	0	Clear.	
Eastport, Maine	30.39	771.9	30.46	773.7	49	9.4	71	SE	15	6.7			10s		SE	0	0	Cloudy	
Erie, Pennsylvania	29.35	745.5	30.06	763.5	52	11.1	93	S	14	6.3			10n			0.73	18.5	Light rain	
Escanaba, Michigan	29.36	745.7	30.02	762.5	47	8.3	85	N	2	0.9		2k	5s	N	N	0	0	Cloudy	
Florence, Arizona	28.41	721.6	30.01	762.2	68	20.0	47	Calm				0	0			0	0	Clear.	
Fort Bayard, New Mexico	24.17	613.9	30.17	766.3	58	14.4	26	N	4	1.8		0	0			0	0	Clear.	
Fort Craig, New Mexico	25.66	651.8			40	4.4	64	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.50	749.3	30.03	762.7	62	16.7	66	S	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.79	731.3	30.05	763.3	58	14.4	75	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.82	732.0	29.92	760.0	57	13.9	69	SW	4	1.8		0	0			0	0	Clear	
Fort Sully, Dakota	28.49	723.6	30.20	767.1	43	6.1	75	NW	4	1.8			5s		Calm	0.60	15.2	Fair	
Galveston, Texas	30.10	764.5	30.14	765.5	70	21.1	61	E	4	1.8		0	0			0	0	Clear.	
Grand Haven, Michigan	29.37	746.0	30.02	762.5	49	9.4	93	SW	3	1.3		5k	Fog	SW		0.37	9.4	Fair	
Indianapolis, Indiana	29.30	744.2	30.09	764.3	49	9.4	89	S	4	1.8		0	2s		Calm	0.09	2.3	Clear	
Indianola, Texas	29.11	739.4	30.14	765.5	71	21.7	71	SE	12	5.4		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.12	765.0	30.14	765.5	66	18.9	84	NE	7	3.1			10s		NE	0.42	10.7	Cloudy	
Keokuk, Iowa	29.23	742.4	29.84	757.9	51	10.6	79	SE	8	3.6		0	4s		Calm	0.38	9.7	Fair	
Key West, Florida	29.95	760.7	29.98	761.5	77.5	25.3	86	E	6	2.7		2cs	1ks	W	E	0.42	10.7	Fair	
Kittyhawk, North Carolina	30.06	763.5	30.08	764.0	68	20.0	100	SW	10	4.5			10n		SW	0.20	5.1	Light rain	
Knoxville, Tennessee	29.20	741.7	30.24	768.1	44	6.7	92	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.26	743.2	30.01	762.2	40	4.4	91	Calm	0	0			Fog			0	0	Foggy	
La Mesilla, New Mexico	26.11	663.2	30.26	768.6	47	8.3	48	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					72	22.2	90	SE	6	2.7		2ck	0	Calm		0	0	Clear	
Leavenworth, Kansas	29.08	738.6	29.91	759.7	55	12.8	73	NW	8	3.6		0	0			0	0	Clear.	
Los Angeles, California	29.67	753.6	30.00	762.0	60	15.6	88	N	3	1.3			Fog			0	0	Foggy	
Louisville, Kentucky	29.57	751.1	30.11	765.5	52	11.1	86	S	3	1.3		0	Fog		S	Inap.	Inap.	Foggy	
Lynchburg, Virginia	29.47	748.5	30.15	765.8	56	13.3	68	W	1	0.4		0	0			1.06	26.9	Clear.	
Maricopa Wells, Arizona					51	10.6	59	E				0	0			0	0	Clear.	
Marquette, Michigan	29.30	744.2	30.00	762.0	50	10.0	78	N	4	1.8			10s		Calm	0.10	2.5	Cloudy	
Mason, Texas	28.45	722.6	30.17	766.3	68	20.0	75	SE	12	5.4			10s		S	0	0	Cloudy	
Memphis, Tennessee	29.87	758.7	30.19	766.8	53	11.7	93	Calm	0	0		0	2s; fg		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.37	746.0	30.07	763.8	39	3.9	100	SW	6	2.7			Fog			0.01	0.3	Foggy	
Mobile, Alabama	30.17	766.3	30.21	767.3	57	13.9	87	N	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	29.98	761.5	30.22	767.6	53	11.7	82	NE	2	0.9		0	Sm'e		Calm	0	0	Clear	
Morgantown, West Virginia	29.10	739.1	30.15	765.8	54	12.2	79	SW	3	1.3			10s		SW	0.52	13.2	Cloudy	
Mt. Washington, N. H.	23.88	606.5	30.24	768.1	36	2.2	100	SE	50	22.4			10n		SE	0.28	7.1	Sleeting	
Nashville, Tennessee	29.66	753.4	30.22	767.6	46	7.8	92	Calm	0	0			Fog		Calm	0	0	Foggy	
New Haven, Connecticut	29.95	760.7	30.06	763.5	60	15.6	94	E	30	13.4			10n		SE	1.05	26.7	Heavy rain	
New London, Connecticut	30.16	766.1	30.21	767.3	58	14.4	100	E	23	10.3			10n		Calm	0.20	5.1	Light rain	
New Orleans, Louisiana	30.12	765.0	30.18	766.6	63.5	17.5	64	E	10	4.5		0	0			0	0	Clear.	
Newport, Rhode Island	30.18	766.6	30.22	767.6	58	14.4	93	SE	16	7.2			10n		SE	0.11	2.8	Heavy rain	
New York, New York	29.85	758.2	30.03	762.7	62	16.7	100	E	16	7.2			10n		E	1.41	35.8	Heavy rain	
Norfolk, Virginia	30.07	763.8	30.12	765.0	60	15.6	100	N	10	4.5			10s		N	0.86	21.8	Cloudy	
North Platte, Nebraska	27.21	691.1	29.83	757.7	42	5.6	58	NW	24	10.7		10k	0	NW		0.02	0.5	Cloudy	
Olympia, Washington Ter.	29.97	761.2	30.01	762.2	49	9.4	93	S	1	0.4			10s		Calm	0	0	Cloudy	
Omaha, Nebraska	28.85	732.8	29.92	760.0	49	9.4	93	N	6	2.7			10s		NW	0.11	2.8	Cloudy	
Oswego, New York	29.75	755.6	30.07	763.8	54	12.2	86	SE	3	1.3		8k	0	W		0.48	12.2	Cloudy	
Pembina, Dakota	29.34	745.2	30.21	767.3	26	— 3.3	88	NW	4	1.8		5c	0	Calm		0	0	Fair	
Philadelphia, Pennsylvania	30.01	762.2	30.06	763.5	60	15.6	88	NW	14	6.3		2k	0	W		2.31	58.7	Clear	
Phœnix, Arizona					62	16.7	32	SE				0	0			0	0	Clear	
Pike's Peak, Colorado	17.92	455.2	30.14	765.5	19	— 7.2	27	W	21	9.4		0	1s		Calm	0	0	Clear	
Pioche, Nevada	24.20	614.7	29.96	761.0	48	8.9	29	SW	2	0.9		0	0			0	0	Clear.	
Pittsburg, Pennsylvania	29.30	744.2	30.12	765.0	53	11.7	86	W	8	3.6			10s		W	0.50	12.7	Cloudy	
Port Huron, Michigan	29.38	746.2	30.04	763.0	48	8.9	93	SW	5	2.2			10ks		SW	0.32	8.1	Cloudy	
Portland, Maine	30.28	769.1	30.34	770.6	52	11.1	79	SE	20	8.9		2k	8n	Calm	S	0.01	0.3	Light rain	
Portland, Oregon	30.04	763.0	30.14	765.5	52	11.1	93	SE	1	0.4			Fog		Calm	Inap.	Inap.	Foggy	
Prescott, Arizona	24.84	630.9	30.20	767.1	46	7.8	43	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	76	24.4	86	NE	8	3.6		9cs	0	Calm		0	0	Cloudy	
Red Bluff, California	29.60	751.8	29.95	760.7	62	16.7	46	NW	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.41	747.0	30.02	762.5	53	11.7	79	W	8	3.6		0	0			0.11	2.8	Clear	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.56	750.8	30.13	765.3	54	12.2	96	Calm	0	0			10s		Calm	0	0	Cloudy	
Sacramento, California	29.86	758.4	29.94	760.5	59	15.0	64	Calm	0	0		0	0			0	0	Clear	
St. Louis, Missouri	29.46	748.3	30.03	762.7	57	13.9	81	S	16	7.2			10n		Calm	0.04	1.0	Light rain	
St. Marks, Florida	30.12	765.0	30.14	765.5	64	17.8	94	NE	6	2.7			10s		NE	0.98	24.9	Cloudy	
St. Paul, Minnesota	29.16	740.7	30.00	762.0	42	5.6	91	Calm	0	0			10s		Calm	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.76	654.3	30.09	764.3	52	11.1	40	SE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.40	746.7	29.98	761.5	65	18.3	83	SE	4	1.8		2ck	2ks	SW	SE	0	0	Fair	
San Diego, California	29.96	761.0	30.03	762.7	65	18.3	83	N	2	0.9			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.43	747.5	30.11	764.8	49	9.4	86	SW	10	4.5		1c	0	Calm		0.01	0.3	Clear	
Sandy Hook, New Jersey	30.00	762.0	30.02	762.5	64	17.8	94	SW	11	4.9			10n		SW	2.10	53.3	Light rain	
San Francisco, California	29.93	760.2	30.00	762.0	53	11.7	93	SW	4	1.8			Fog		SW	0	0	Foggy	
Santa Fé, New Mexico	23.42	594.9	29.96	761.0	42	5.6	35	NE	1	0.4		Haze	Haze			0	0	Hazy	
Savannah, Georgia	30.06	763.5	30.15	765.8	64	17.8	89	NE	4	1.8		0	2ks		NE	0.01	0.3	Fair	
Shreveport, Louisiana	29.96	761.0	30.18	766.6	57	13.9	87	SE	2	0.9		0	0			0	0	Clear	
Smithville, North Carolina	30.12	765.0	30.16	766.1	63	17.2	94	N	4	1.8		2ck	2ks	SW	N	0.76	19.3	Fair	
Springfield, Massachusetts	29.91	759.7	30.04	763.0	51	10.6	86	S	11	4.9			10n		S	0.81	20.6	Light rain	
Stanwix, Arizona																			
Stockton, Texas					56	13.3	81	SE	8	3.6		0	0			0	0	Clear	
Thatcher's Island, Mass	30.25	768.3	30.30	769.6	54	12.2	93	SE	16	7.2			10s		S	0	0	Cloudy	
Toledo, Ohio	29.40	746.7	30.08	764.0	50	10.0	78	S	4	1.8		0	Haze		Calm	0.05	1.3	Hazy	
Tucson, Arizona	27.60	701.0	30.14	765.5	60	15.6	61	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.12	765.0	30.15	765.8	65	18.3	94	NE	12	5.4			10ks		NE	0.07	1.8	Cloudy	
Umatilla, Oregon	29.79	756.7			45	7.2	92	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.96	761.0	30.22	767.6	55	12.8	86	SE	8	3.6		0	0			0	0	Clear	
Virginia City, Montana	24.39	619.5	29.87	758.7	40	4.4	56	Calm	0	0			10s		Calm	0	0	Cloudy	
Visalia, California	29.60	751.8	29.96	761.0	58	14.4	58	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	30.02	762.5	30.14	765.5	54.5	12.5	87	W	4	1.8		Haze	Sm'e			1.48	37.6	Clear	
Wickenburg, Arizona					50	10.0	32	NE				0	0			0	0	Clear	
Wilmington, N. Carolina	30.05	763.3	30.13	765.3	63	17.2	88	N	8	3.6		0	8s		NW	0.19	4.8	Fair	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	36	2.2	45	NE	6	2.7		0	0			0	0	Clear	
Wood's Holl, Mass	30.23	767.8	30.28	769.1	58	14.4	81	SE	15	6.7			10s		SE	0	0	Cloudy	
Yankton, Dakota	28.76	730.5	30.07	763.8	44	6.7	92	NE	20	8.9			10n		Calm	0.18	4.6	Light rain	
Yuma, Arizona	29.81	757.2	29.98	761.5	63	17.2	33	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.21	767.3	30.25	768.3	20.5	— 6.4	92	SE	4	1.8		3cs	0	SE		0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.92	760.0	29.94	760.5	79	26.1	78	SE	3.6	1.6		0	0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	80	26.7	78	Calm	0	0		2k	0	SE		0	0		James Gall.
Navassa, W. I.	29.87	758.7	29.95	760.7	83.5	28.6		E			1					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					81	27.2	87	NE				8c	2n	E		0.21	5.3	Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.84	757.9	29.86	758.4	81	27.2	87	E				0	2k		E			Clear	L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.00	762.0	83	28.3	79	E			2	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			68.0	20.0	80	Calm			0	0	3ks			0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,927.9 ft., or 587.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m., Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.51 in.; Stockton, 3.00 in Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.98	761.5	58	14.4	54	12.2	87	SW	11	4.9			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.27	768.8			65	18.3	84	NE	7	3.1			3			0	0			D clouds	
Navy Yard, Portsmouth, N. H	30.29	769.4	58	14.4	53	11.7	86	SSE	7	3.1			10		NW	0.2	5.			Rainy	
Naval Hospital, Yokohama, Japan	30.16	766.1	68.5	20.3	64.5	18.1	94	N			1		2k		ESE	0.32	8.1			Fair	
Adams, Montevideo, Uruguay	29.95	760.7	64	17.8	57	13.9	75	E			2		10		S	Light	Light	Light	E	Raining	
Alert, Vladivostok	30.20†	767.1†	63	17.2	63	17.2	78	S			2–3		9		S					D. clouds	
Alliançe, Constantinople, Turkey.	29.85	758.2	67	19 4	67	19.4	84	SSE			2		10		S&W					Overcast	
Ashuelot, Tang-koo, China	30.05	763.3	63	17.2	55	12.8	43	NNW			7		8		NNW					Hazy	
Canonicus, New Orleans, La	30.17	766.3	48	8.9	62	16.7	72	NE			2		0							Clear	
Colorado, New York, N. Y.	30.10	764.5	67	19.4	62	16.7	100	S	12	5.4			10		S	2.03+	51.6+			Raining	
Despatch, Constantinople, Turkey.	29.88	758 9	68	20.0	66	18.9	84	SE			2		10		WSW					Rainy	
Franklin, Norfolk, Va.	30.20	767 1	61	16.1	61	16.1	??	NNW	1	0.4			4		NNW	0.9	23.			Cloudy	
Frolic, St. Thomas, W. I.	30.12	765.0	83	28.3	82	27.8	87	NE			3		8kn		Calm	Blank	Blank	Smooth		D. clouds	
Gettysburg, Norfolk, Va.	29.70‡	754.4‡			63	17.2	100	N			1		10		SW					Raining	
Kearsarge, Pt. de Galle, Ceylon	29.94	760.5			83	28.3	87	S			2		6		S	0	0	Long	S&E	D. clouds	
Lackawana, Esquimault, B. C.	30.04	763.0			50	10.0	86	NNW			0–1		10							D. clouds	
Marion, Smyrna, Turkey	29.97	761.2	77	25.0	77	25.0	91	S			6		8		S	Heavy	Heavy	Rough	S	D. clouds	
Michigan, Lake Michigan	29.55	750.6	61	16.1	45	7.2	92	SW			4		10		SW					Foggy	
Monocacy, Hakodadi, Japan	30.13	765.3	58	14.4	56	13 3	81	N			1		1		NW	0	0	Smooth		D. clouds	
Monongahela, N. 55° 36′, W. 52° 55′	29.92	760.0	73	22.8	73	22.8	72	SE			0–1		ck			Light	Light	Long	N&W	D. clouds	
New Hampshire, Port Royal, S. C.	30.32	770.1			65	18.3	89	NNE	14	6.3			6		NE	0.03	0.8			D. clouds.	
Omaha, Valparaiso, Chili	30.09	764 3	63	17.2	60	15.6	76	Calm	0	0			7		Calm	0	0	Smooth		Pleasant.	
Onward, Callao, Peru	30.06†	763.5†	70	21.1	68	20.0	84	SE			1		3					Long	W	D. clouds	
Ossipee, Newport, R. I.	30.30	769.6	70	21.1	60	15.6	88	ESE			5		10		SE					Raining	
Palos, Shanghai, China	30.10	764.5	69	20.6	67	19.4	84	ESE			1–2		1		Calm	0	0			Clear	
Pensacola, Mare Island, Cal.	30.03	762.7			57	13.9	100	WSW			1		10			0	0			Overcast	
Plymouth, Norfolk, Va.	30.40	772.1	66	18.9	62	16.7	88	NNW			3–4		10							Overcast	
Ranger, Nagasaki, Japan	30.26	768.6			65	18.3	78	Calm			0		3		Calm	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.98	761.5			73	22.8	95	NNE			1		1		E					Hazy	
Santee, Annapolis, Md.	30.17	766.3	61	16.1	56	13.3	87	NW			2		2			2.04	51.8			Cloudy	
St. Louis, League Island, Pa	29.95	760.7	60	15.6	69	20.6	51	SE	4	1.8			10		SW	1.85	47.0			Rainy	
Tennessee, Yokohama, Japan	30.16	766 1	71	21.7	66	18.9	89	ENE	4	1.8			0			0.41	10.4	Light	N&E	D. clouds	
Trenton, Marseilles, France	29.79	756.7	68	20.0	64	17.8	49	N	20	8.9			1		N	0	0			Squally	
Vandalia, N. 37° 47′, E. 24° 27′	29.78	756.4	74	23.3	74	23.3	76	SSW			5		10		SSW					D. clouds	
Wabash, Boston, Mass.	30.31	769.9	57	13.9	55	12.8	87	SE	24	10.7			10		Calm	0.03	0.8			Raining	
Wyoming, Washington, D. C.	30.54†	775.7†	62	16.7	58	14.4		Calm			0		2							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 30° 53′, E. 130° 80′			30.25*	768.3*	69	20.6	95	SE			4		10		SE	Rough	SE	Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 00′, W. 172° 09′			29.95†	760.7†	68	20.0		SW			7		10		SSW	Smooth	SE	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneroid; instrumental error not known.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. R. Glendell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic,																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley
S. S. Oceanic, N 29° 44′, W. 170° 00′			29.96	761.0	78	25.6	78	S			4		3		S	Moderate.	NW	D clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			30.39*	*771.9	45	7.2		NNW			6		2		NNW				Captain Sargent.
S. S. Ohio, Mersey River			30.41	772.4	56	13.3	87	NW			2		10		NNW				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.14	765.5	67	19.4	84	NE	7	3.1		0	5d		NE			Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 10, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.01	762.3	72.3	22.4	55	NNW			1		0			0	0	Clear	Michel.
Algiers			30.00	761.9	63.7	17.6	72	W			1		6			0.256	6.5	Cloudy	Peter.
La Calle			29.92	759.9	64.8	18.2	75	W			3		7			0.472	12.0	Very cloudy	Fleury.
Tunis			29.82	757.3	66.9	19.4	49	W			3		3			0	0	Pretty fair	Jacques.
Sfax																			Husson.
Saida			29.94	760.5	61.0	16.1		N			1		2			0	0	Fair	Millot.
Tebessa			29.93	760.2				NW			2		4			0	0	Cloudy	Bourgeois.
Geriville			29.91	759.8	56.5	13.6	62	WNW			2		4			0	0	Cloudy	Lemaillot.
Laghouat			29.96	761.0	62.6	17.0	52	N			4		0			0	0	Clear	François.
Biskra			30.00	762.1	73.4	23.0	52	NW			2		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.50	749.4	30.06	763.5	50.7	10.4	61	NE			3		10			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.38	746.3	30.17	766.2	47.1	8.4	60	NE			1		10			0	0		Dr. Wierzbiski.
Eperies	29.19	741.4	30.08	764.1	45.7	7.6	64	N			3		10k;s		S	0	0		Julius Mikolik.
Gratz	28.84	732.6	30.11	764.8	49.1	9.5	80	W			1		10			0	0		Andreas Rospini.
Hermannstadt	28.51	724.2	29.95	760.8	47.1	8.4	91	WSW			2		10			0.154	3.90	Rainy	Prof. Reissenberger.
Kremsmünster	28.73	729.8	30.10	764.6	45.3	7.4	61	ENE			2		10			0	0		Prof. C. Wagner.
Lemberg	29.06	738.2	30.08	764.0	42.8	6.0	85	NE			1		10			0.071	1.8		Dr. T. Stanecki.
Pola	29.79	756.6	29.90	759.5	53.1	11.7	51	ENE			6		10s			0	0		I.R.HydrographicOffice
Szathmar																			Johann Tamas, S. J.
Szegedin	29.72	754.8	30.00	762.0	49.6	9.8	74	NE			2		10			0	0		Karl Stancel.
Trieste	29.89	759.1	29.99	761.7	53.8	12.1	51	ENE			5		0			0	0	Clear.	P. Busin.
Vienna	29.42	747.2	30.12	765.1	49.1	9.5	51	NE			2		9			0	0		I. R. Central Met. Obs'y

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.65	727.6	30.18	766.6	46.9	8.3	54	SW			1		9			0	0	Solar halo	Royal Observatory.
Brussels	29.95	760.7	30.15	765.8	52.0	11.1	58	SW			5		1	N	SW	0	0	Solar halo	
Furnes	30.11	764.9	30.14	765.5	52.3	11.3	77	SW			2		10			0.299	7.6		
Maeseyck	30.05	763.3	30.18	766.6	52.2	11.2	57	SW			4		3			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.53	750.0	29.63	752.6	52.0	11.1		SSW	17	7.6			9			0.050	1.27	Overcast	W. Boswell.
Ardrossan	29.72	754.9	29.74	755.4	53	11.7		SSW			5		9					Overcast	William McNeil.
Armagh, Observatory			29.83	757.7	52.8	11.6		SSW	12	5.4			10					Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.94	760.5	55.0	12.8		WSW	12	5.4			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.91	759.7	54.2	12.3		WSW			3–4		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.52	749.8	29.92	760.0	50.5	10.3		S			1		10			0	0	Threatening	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	85	29.4		NE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.06	763.5	50.0	10.0		SW			1		10					Overcast	H. Todd. [H. C.
Cardington			30.07	763.8	51.6	10.9		SW			1		10					Overcast	John McLaren.
Chatham, School M. E.	30.03	762.7	30.16	766.1	54.2	12.3		SW			2		9					Gloomy	Lt. W. G. Morris, R. E.
Dartmoor	28.67	728.2	30.16	766.1	47.0	8.3		SW			4		9					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.75	755.6	29.78	756.4	53	11.7		SW			4		10					Overcast	J. Mac Gowan.
Dover	30.08	764.0	30.11	764.8	56	13.3		WSW			3		5					½ clouded	J. Costello.
Eccles, (near Manchester)			29.95	760.7	51.7	10.9		N	1.8	0.8			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.91	759.7	30.14	765.5	53.2	11.8		SSW			3		10					Overcast	The Staff.
Fort Napier, (Natal)	27.78	705.6	30.11	764.8	61.7	16.5		E			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			30.02	762.5	75	23.9		Calm?			1?		5					Drizzling	
Galway, Queen's College					57	13.9		N			5		5					Showery	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	29.87	758.7	29.91	759.7	68.0	20.0		E			5		2					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.52	749.8	29.73	755.1	51.4	10.8		SSW			8		10					Squally	D. G. Maclean.
Great Yarmouth	30.05	763.3	30.06	763.5	50	10.0		SW			3		6					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.92	760.0	30.10	764.5	52.3	11.3		WSW			2		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.94	760.5	30.16	766.1	55	12.8		WSW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.18	766.6	55	12.8		SW			6		10n			0	0	Gloomy	M. P. Moyle.
Holyhead	29.86	758.4	29.91	759.7	57	13.9		SW			5		10					Overcast	John Tilston.
Jersey	29.90	759.4	30.19	766.8	54.0	12.2		W			2		10					Misty	J. Fisher.
Kew, Observatory			30.10	764.5	51.2	10.7		WSW	10	4.5			10					Hazy	The Staff.
Kingstown	29.90	759.4	29.93	760.2	56	13.3		SW			3		9					Overcast	George Mitchell.
Leicester, Museum			30.00	762.0	50.1	10.1		SW			4		7					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.69	754.1	29.73	755.9	70.6	21.4		NW			2		8					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.42	747.3	29.51	749.5	57	13.9		WNW			6		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.01	762.2	80.0	26.7		NE			1		8					Gloomy	C. S. Duncombe.
Nottingham, Observatory	29.82	757.4	30.01	762.2	53.2	11.8		WSW			4		10k		WSW	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.47	748.5	30.00	762.0	50.9	10.5		SSW			4		10					Foggy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.07	763.8	52	11.1		SW			1		10					Gloomy	F. Lucas
Plymouth	30.06	763.5	30.13	765.3	52.0	11.1		NW			3		10					Raining	John Merrifield.
Roche's Point	29.96	761.0	30.01	762.2															W. Kennedy.
Saint Ann's Head	29.86	758.4	30.02	762.5	56	13.3		SW			6		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys)			29.44	747.8	52	11.1		S	20	8.9			10					Drizzling	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.90	759.4	75.6	24.2		Calm			0		10			Blank	Blank	Gloomy	Sergt. W. H. Lyne.
Sheffield	29.67	753.6	29.91	759.7	53.8	12.1		SW			3		10			0.02	0.5	Misty	W. F. Cooper.
Silloth Rectory	29.78	756.4	29.81	757.2	52.2	11.2	92	SW			6		10			0.310	7.87	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					51.5	10.8		SW			2		10					Squally	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.44	747.8	54	12.2		SW			7		10					Threatening	John Smith.
Stratfield Turgiss	29.91	759.7	30.13	765.3	51.2	10.7		SW			1		10					Overcast	Rev. C. H. Griffith, F.M.S.
Thurso			29.41	747.0	55	12.8		SSW			4		9					Raining	John Trotter.
Truro, Royal Institution			30.12	765.0	57	13.9		SW			6		10					Gloomy	W. Newcombe.
Valencia, Observatory			29.95	760.7	56.1	13.4		SW	29	13.0			10					Drizzling	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					52	11.1		SW			4		10			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.27	768.8	30.31	769.9	68.5	20.3	52	SE	8	3.6		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.44	773.2	50.0	10.0	81	SE			2		10kn			0.10	2.5	Covered	Francis Abbott, F.R.A.S
Leith, Restalrig Park			29.74	755.4	54.2	12.3		SW			5		6k			0.04	1.0	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.98	761.5	30.17	766.3	75.4	24.1	64	E	20.5	9.2		2	4	WNW	ESE	0.11	2.8	Fine	C. Meldrum.
Melbourne, Observatory	30.24	768.1	30.34	770.6	48.2	9.0	79	SE	13	5.8			0			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides			29.50	749.3	54	12.2		W			7	5	5	NW		0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.38	746.2	50	10.0		W			6	5	7	W		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria, New York, N. Y.			30.14	765.5	62	16.7		SW		1		1			0*		Foggy	Capt. W. Watson.
S. S. Batavia																		Capt. J. E. Mouland.
Ship Camperdown																		Capt. A. T. Miller.
Brig Catherine, N. 38° 55′, W. 74° 10′			30.17	766.3	62	16.7		N		2		1			1	SE	Blue sky	Capt. Adam Smith.
Barque Celeste																		Capt. D. F. McKechnie
S. S. Hibernia																		Capt. W. R. Cato
Barque Maroon																		Capt. A. T. Brown.
Ship Mikado																		Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 5′			30.47	773.9	51	10.6		NNW		4		6			4	N	D. clouds	Capt. H. Manning.
Barque Sorata																		Capt. Jas. J. Price.
Schooner Traveller, N. 48° 15′, W. 36° 35′			30.38	771.6	55	12.8		NE		6		9			5	N	Drizzling	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.23	666.2			69.4	20.8	91	NE			2	5ck	1s	E	NE	0.1	8.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.98	761.6	30.03	762.8	48.9	9.4	83	SW			4		10						
Fanöe	29.95	760.7	29.97	761.2	52.5	11.4	82	WSW			4		9					Raining	
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.02	737.0	29.06	738.1	35.4	1.9	96	NE			8		10						
Thorshavn, (Faröe)	29.11	739.3	29.14	740.2	46.9	8.3	74	WSW			6		5					Raining	
Vestervig	29.66	753.4	29.83	757.7	50.0	10.0	98	SSW			4		10					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alenvon, Normal School	29.71	754.6	30.26	768.6	55.4	13	32	NE			2		5		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.07	763.6	30.18	766.5	59.7	15.4	56	E			2		2		NNW	0	0	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	29.90	759.4	29.98	761.4	56.7	13.7	39	N			6		0			0	0	Clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.58	751.3	30.15	765.9	51.6	10.9	48	NE			2	2c		NE		0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	30.01	762.3	30.17	766.4	54.7	12.6	38	N	3.6	1.6					N	0	0		Albert Cheux.
Beauvais	29.91	759.7	30.20	767.0	53.1	11.7	53	SW			1		5			0	0	Cloudy	Normal School.
Besançon	29.21	741.8	30.11	764.8	48.2	9	56	NE			6		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.22	742.1	30.13	765.4	50.2	10.1	52	N			4		2k		N	0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.59	751.5	30.14	765.6	52.5	11.4	59	NNE			2		1		NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.90	759.4	30.11	764.9	59.5	15.3	70	SW			3		9ks		SW	0	0		The Staff.
Carcassonne, Normal School	29.64	752.9	30.06	763.4	56.5	13.6	45	W			2		1		W	0	0	Clear	Vateau, Director.
Caen	30.11	764.7	30.18	766.6	55.2	12.9	68	NE			1		10			0	0	Covered	Normal School.
Chartres, Normal School	29.62	752.3	30.19	766.7	57.9	14.4	89	N			1		9			0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.86	758.5	30.19	766.7	53.1	11.7	50	NNE			1	2c		NNE		0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.6	30.09	764.3	52.0	11.1	41	N			2		1		N	0	0	Clear	Allnard, Director.
Commercy, Normal School	29.24	742.6	30.14	765.6	47.5	8.6	48	NE			2		5cks		NE	0	0	Partly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.82	732.0	29.96	761.0	58.1	14.5	31	W			4		0			0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.96	761.0	30.18	766.6	56.1	13.4	39	E			2		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.87	758.8	30.19	766.7	52.2	11.2	63	NE			2		8		N	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	739.9	30.06	763.4	49.5	9.7	50	NE			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.13	765.2	30.23	767.7	59.0	15.0	58	S			2		5		SW	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.38	746.3	30.04	763.0	48.0	8.9	80	NE			6		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.06	738.2	30.13	765.2	47.8	8.8	73	N			4		1		SW	0	0	Clear.	Normal School.
Nismes, Normal School	29.75	755.6	29.95	760.8	61.7	16.5	79	N			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.77	756.2	30.15	765.9	52.9	11.6	41	NE			2		2		NE	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	29.94	760.5	30.19	766.7	51.3	10.7	46	N			1		6			0	0	Hazy	National Observatory.
Privas	28.98	736.2	30.07	763.6	51.4	10.8	63	N			4		1		N	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.16	766.1	30.19	766.8	57.2	14.0	47	NNE			3		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.09	764.2	30.17	766.4	55.4	13.0	53	NNW			2		10		NW	0.028	0.7	Covered	F. Lucard, Director.
Tarbes, Normal School	29.07	738.3	30.18	766.5	44.6	7	91	N			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.35	745.5	30.07	763.7	53.8	12.1	57	NW			6		5		NE			Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.5	29.85	758.2	82.8	28.2										0.31	8.		L'Abbé Marchési.
Marseilles, Observatory			29.89	759.2	57.6	14.2	36	WNW			2		0			0	0	Clear.	The Staff.
Mont-Louis	24.79	629.6	30.10	764.6	39.9	4.4	23	NNW	18.6	8.33			0			0.012	0.3		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.89	759.3	30.17	766.3	51.3	10.7	46	Calm			0		8			0	0		Marié Davy, Director.
Perpignan			29.98	761.6	55.8	13.2	29	N	24.2	10.83			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.19	538.3			28.4	− 2.0		N			2		1					Clear.	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.45	570.2			36.5	2.5		N			1		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.01	762.3	30.18	766.5	54.3	12.4	40	NE			1		0			0	0		E. Renou.
Toulouse, Observatory	29.39	746.4	30.11	764.8	51.3	10.7	33	NW			3		0			0	0		The Staff.
Tours	29.97	761.2	30.17	766.2	53.6	12.0	43	NNE			1		3		NNW	0	0		C. Marquet.
Versailles, (near Paris)			30.18	766.5	54.7	12.6	40	NE			1		5			0.006	0.14	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.07	763.6	30.09	764.2	54.7	12.6	30	NW	21.3	9.5			0			0	0	Dusty	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.98	761.5	30.15	765.8	48.4	9.1	56	S			1		2			0	0		Prof. Arndt.
Breslau	29.67	753.6	30.21	767.2	46.4	8.0	53	W			1		5			0	0		Royal University Obs'y.
Carlsruhe	29.70	754.3	30.13	765.4	49.6	9.8	59	NE			1		1			0	0		Albert Senz.
Cassel	29.60	751.8	30.21	767.3	49.3	9.6	51	SE			2		2	SE		0	0		Dr. H. Möhl.
Crefeld	29.99	761.8	30.15	765.9	53.4	11.9	50	S			2		5cs;k			0	0		Director Lose.
Emden	30.07	763.8	30.11	764.7	51.8	11.0	80	SW			3					0	0		Prof. Prestel.
Frankfort on the Main	29.84	757.8	30.17	766.3	49.8	9.9	33	SSE			1		2			0	0		Physical Society.
Friedrichshafen	28.65	727.7	30.11	764.8	47.5	8.6	51	NE			5		3	NE		0	0		M. Wilhelm.
Hamburg	30.05	763.2	30.12	765.0	49.5	9.7	83	SW			3		10			0	0	Cloudy	Captain F. Hegemann
Kiel	30.04	763.0	30.06	763.4	50.4	10.2	81	SW			4		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.00	762.0	30.08	764.0	46.8	8.2	63	W										Cloudy	Prof. E. Luther.
Köslin			30.04	763.0	48.0	8.9		Calm			0		1			0	0		H. Müller.
Leipsic, Observatory	29.80	756.8	30.23	767.7	46.8	8.2	57	W			2		7	WSW		0	0		Prof. Bruhns.
Memel, Naval School	30.03	762.8	30.08	764.0	49.6	9.8	62	W			4		10cs						Reinbrechtvon Skalweit
Neufahrwasser	30.11	764.7	30.12	765.1	48.9	9.4	65	WNW			3		7			0	0		A. Lothes.
Posen	29.92	760.0	30.22	767.6	48.0	8.9	59	W			1		3					Fair	Dr. Magener.
Strassburg Obs., (in Alsace	29.59	751.6	30.15	765.8	50.0	10.0	55	N			4		1			0.001	0.03		Dr. Schur.
Stuttgart	29.17	740.9	30.13	765.2	47.8	8.8	59	N			1		8	E		0	0		Prof. Schoder.
Treves, (Trier)	29.53	750.0	30.05	763.3	49.1	9.5	50	NW			1		3			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.61	726.6	30.14	765.5	46.6	8.1	43	NE			1		4		NE	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.13	765.3	30.17	766.3	47.1	8.4	79	SW			2		4					Fair	E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.: Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.54	750.2	29.91	759.8	73.6	23.1		SW										Cloudy	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.80	756.9	29.85	758.2	83.8	28.8	70	SW	22.0?	9.8?			0			0	0	Blue sky	
Deesa	29.41	747.1	29.89	759.1	87.3	30.7	56	Calm					0			0	0	Blue sky	
Bombay	29.81	757.3	29.85	758.2	83.6	28.7	85	NW	12.0	5.4			10	NNW	N	0	0	Misty	
Poona	27.80	706.2	29.80	756.8	80.2	26.8	85	SE					10		S	0.02	0.5	Lightning	
Lahore	29.17	740.8	29.92	760.0	73.8	23.2	59	N	1.4	0.6			10		N	0	0	Cloudy	
Belgaum	27.33	694.1	29.88	758.9	73.2	22.9	84	W	3.0	1.3			9		E	0.02	0.5	D. clouds	
Bangalore																			
Roorkee	28.97	735.9	29.88	758.9	76.8	24.9	86	N	1.2	0.5			2			0	0		
Agra	29.27	743.5	29.84	758.0	78.8	26.0	78	N					3			0	0		
Trichinopoly																			
Nagpur	28.80	731.5	29.80	757.0	81.6	27.6	79	Calm	1.2	0.5			4			0	0	D. clouds	
Madras																			
Lucknow	29.47	748.6	29.85	758.1	80.3	26.8	82	NW	3.8	1.7			4		W	0	0	D. clouds	
Allahabad	29.54	750.3	29.85	758.2	77.9	25.5	90	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.68	753.9	29.86	758.5	76.9	24.9	88	E	0.5	0.2			10	E	E	0.24	6.1	Overcast	
Hazaribagh	27.84	707.2	29.88	758.9	72.6	22.6	89	NW	5.7	2.6			10			0.20	5.1	Showery	
Cuttack	29.74	755.4	29.82	757.5	85.0	29.4	71	S	5.4	2.4			2			0	0	Blue sky	
Calcutta (Alipore)	29.85	758.1	29.87	758.7	80.9	27.2	91	WNW	1.0	0.4			4			0	0	D. clouds	
Goalpara	29.50	749.2	29.89	759.2	73.9	23.3	95	Calm	4.0	1.8			8	W		0.05	1.3	D. clouds	
Chittagong	29.79	756.8	29.89	759.1	82.1	27.8	85	Calm	3.4	1.5			3			0	0	Blue sky	
Sibsagar	29.61	752.1	29.95	760.7	77.1	25.1	82	Calm	1.9	0.8			8			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.47	723.2	29.84	757.8	80.2	26.8	83	NW	2.6	1.2			2	NW		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.08	560.8	29.95	760.6	28.8	— 1.8	58	NW			2		0			0	0		Ab. Dom. Morgini.
Stelvio	22.03	559.6	29.92	759.9	28.0	— 2.2		NNE			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.55	750.5	29.96	760.9	55.0	12.8	23	E	7.4	3.3			1			0	0		Prof. Giovanni Clodig.
Padua	29.85	758.3	29.97	761.1	56.5	13.6	33	ESE	16.1	7.2			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.78	756.3	29.97	761.2	57.6	14.2	28	E	3.1	1.4			0			0	0		Conte Alm. Da Schio.
Verona	29.74	755.5	29.97	761.1	61.9	16.6	39	SE	6.9	3.1			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.68	728.4	29.99	761.7	55.4	13.0	43	NW			2		0			0.012	0.3		Prof. Trionfini Carlo.
Domodossola	28.91	734 2	29.93	760.3	54.1	12.3	41	S			4		0			0	0		Prof. Giuseppe Calza
Milan	29.48	748.8	30.00	762.0	56.3	13.5	49	E			4		1	S		0	0		Ab. Gio. Capelli.
Pavia	29.66	753.4	30.01	762.2	54.5	12.5	35	NE			2		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.68	738.6	29.98	761.6	54.7	12.6	59	SW	0.7	0.3			1			0	0		Prof. P. F. Denza.
Mondovi	28.06	712.7	29.98	761.4	50.7	10.4	32	NW			4		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.67	753.7	29.89	759.3	62.4	16.9	10	ENE			8		2			0	0		Prof. L. Vassallo.
Genoa	29.73	755.1	29.90	759.4	64.8	18.2	17	N	4.3	1.9			0			0	0		Prof. G. M. Garibaldi
Piacenza	29.73	755.1	29.98	761.6	56.5	13.6	24	E	11.2	5.0			1			0	0		Dott. G Manzi.
Parma	29.64	752.9	29.96	761.0	56.5	13.6	32	SE			8		1			0	0		Prof. P. Pigorini.
Florence	29.65	753.2	29.91	759.7	55.4	13.0	52	NE			6		10	NE		0	0		Cav. F Meucci.
Leghorn	29.77	756.1	29.85	758.2	58.3	14.6	35	NE	9.4	4.2			10			0	0		Prof. P. Monte.
Siena	28.67	728.3	29.88	758.9	52.7	11.5	54	ENE	15.4	6.9			10	E		0	0		Prof. L. Toscani.
Urbino	28.35	720.1	29.91	759.8	45.7	7.6	7	NE			4		10			2.028	51.5		Prof. P. Serpieri.
Pesaro	29.87	758.6	29.91	759.8	51.8	11.0	82	NE	42.3	18.9			10	NE		0.291	7.4		Prof. Luigi Guidi.
Ancona	29.80	757 0	29.91	759.7	52.2	11.8	74	E			8		10			0.850	21.6		Prof. F. DeBosis.
Grosseto	29.73	755.1	29.84	757.9	56.5	13.6	69	NNE			6		7	SE		0.154	3.9		Avv. P. Ponticelli.
Rome	29.58	751.3	29.75	755.7	57.9	14.4	76	N	4.3	1.9			10			0.937	23.8		Prof's. P. Secchi & L. Respighi
Naples, O. U.	29.56	750.8	29.76	755.8	54.3	12.4	65	S			4		7	SW		2.150	54.6		Prof. L. Palmieri.
Lecce	29.37	746.0	29.62	752.3	68.4	20.2	66	SSE	15.0	6.7			9	S		0.016	0.4		Prof. C. De Giorgi.
Cosenza	28.88	733.5	29.75	755.7	64.9	18.3	78	NW	0	0			10			0.134	3.4		Prof. F. D. Conti.
Cagliari	29.44	747.8	29.63	752.6	61.0	16.1	51	NW			6		7	E		0.075	1.9		Prof. A. Pacinotti.
Riposto, (Sicily)	29.47	748.6	29.52	749.8	70.5	21.4	70	E			4		9			0.024	0.6		Prof. F. Cafiero.
Palermo	29.44	747.7	29.69	754.0	66.2	19.0	51	WSW	6.9	3.1			8			0	0		Prof. G. Cacciatore.
Caltanissetta	27.79	705.9	29.71	754.5	60.4	15.8	71	SW			4		4			0	0		Prof. A. Pagani.
Syracuse	29.61	752.2	29.69	754.1	70.3	21.3	63	W			1		6	WNW		0.161	4.1		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.22	742.3	29.78	756.4	63.9	17.7	69	ESE	0	0			4			3.811	96.8		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *160.0 m. m., or 6.301 in., unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.94	760.5	30.04	763.0	65.3	18.5	98	NNE	4	1.8			10n			0.38	9.7	Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.22	589.8	30.30	769.6	53.6	12.0	68	W	0.9	0.41		8c	1s	W		0	0	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594,2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,499 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.14	765.6	30.14	765.6	54.7	12.6		SSW			4					0	0		
Groningen	30.03	762.8	30.09	764.2	51.3	10.7		SW			2					0	0		
Helder	30.07	763.6	30.06	763.6	52.2	11.2		SW			4					0.047	1.2		
Hellevoetsluis			30.12	765.0	52.9	11.6	82	SW			4								
Utrecht	30.09	764.2	30.13	765.4	54.0	12.2	73	SSW			3		S			0	0	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.63	752.5	29.68	753.9	51.1	10.6	98	S	19.5	8.7			10			1.504	38.2		
Brönö	29.38	746.2	29.42	747.2	47.8	8.8	89	SW	29	13			10					Light rain	
Christiania	29.53	750.1	29.68	753.8	54.1	12.3	73	W	0	0			10			0	0		
Tromsö	29.22	742.2	29.26	743.3	35.2	1.8	60	NW	4	2			10			0.433	11.0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.12	765.1	30.31	769.9	64.2	17.9	74	ENE	9.4	4.2			6			0	0		Dr. J. A. Sampaio
Campo Major	29.01	736.9	30.03	762.8	63.5	17.5	35	ESE	4.3	1.9			0			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.89	759.3	29.97	761.1	73.0	22.8	67	SW	4.9	2.2			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.65	753.2	30.01	762.3	63.9	17.7	42	NE	15.0	6.7			0			0	0		The Staff.
Ponta Delgada, (Azores)	30.20	767.0	30.27	768.8	65.8	18.8	72	NE	5.6	2.5			10			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		Observer.
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.73	755.2	30.17	766.2	45.7	7.6	69	NW	4	2			10						Astronomical Obs.
Wilna	29.67	753.7	30.10	764.5	45.9	7.7	64	W	2	1			4						Astronomical Obs.
Dorpat	29.67	753.5	29.91	759.7	47.5	8.6	74	WSW	11	5			10						Prof. Dr. Weihrauch
St. Petersburg	29.79	756.6	29.80	757.0	45.9	7.7	86	WSW	4	2			10						Central Physical Obs.
Kuopio	29.33	744.9	29.65	753.1	40.5	4.7	96	S	7	3			10					Raining	Ch. Forsten.
Kieff	29.38	746.2	30.02	762.6	45.7	7.6	85	N	7	3			10						Physical Cabinet.
Nikolaiev	29.91	759.7	29.98	761.5	55.0	12.8	80	NW	0	0			10						Kurdakof.
Kertch	29.96	760.9	29.98	761.4	67.3	19.6	85	N	4	2			5						Lagorio.
Moscow	29.41	747.0	29.97	761.2	42.8	6.0	62	SW	9	4			8						Meteorological Obs.
Lugan	29.63	752.6	29.83	757.7	58.6	14.8	88	NNE	9	4			9			Blank	Blank		Meteorological Obs.
Archangel	29.58	751.4	29.60	751.9	33.8	1.0	85	W	22	10			9						Ogorodnikof.
Tiflis	28.69	728.8	30.07	763.7	72.9	22.7	61	SSE	4	2			8						Physical Observatory.
Astrakhan	30.04	763.1	29.96	761.0	64.0	17.8	82	SSW	27	12			10			Blank	Blank		Sebastianof.
Kasan	29.46	748.2	29.73	755.2	44.2	6.8	76	SW	4	2			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	28.84	732.4	29.80	756.9	37.9	3.3	73	SSE	7	3			10						Meteorological Obs.
Nukuss																			
Kasaly																			Bobrof.
Tashkend	28.65	727.6	30.39	771.9	49.1	9.5	99	Calm	0	0			0						Michelson.
Barnaul	29.87	758.8	30.42	772.6	37.2	2.9	54	Calm	0	0			0						Meteorological Obs.
Yeniseisk	30.03	762.7	30.17	766.4	37.9	3.3	85	S	2	1			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.10	764.4	30.24	768.0	43.9	6.6	38	NW	34	15			1						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor																			

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.80	706.0	30.02	762.5	58.6	14.8	32	E	8.2	3.67		1	0	NNE		0	0	Almost clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.5	30.02	762.6	79.1	26.2	87	Calm	0	0		0	1k			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	29.84	757.9	29.94	760.4	70.3	21.3	56	WNW	12.9	5.75		0	8		SE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.93	760.1	79.9	26.6	75	SE	0	0		2s	7kn		E	1.526	38.75	Cloudy	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.54	750.3	29.58	751.3	35.6	2.0		S			4		10			0	0		
Umea	29.49	749.0	29.54	750.3	51.4	10.8	81	Calm			0		7			0.051	1.3		
Hernosand	29.55	750.5	29.60	751.8	56.3	13.5	70	SW			2		8			0.063	1.6	Raining	
Stockholm	29.55	750.6	29.73	755.1	48.6	9.2	87	S			2		10			0.008	0.2		
Wisby	29.81	757.2	29.87	758.7	46.4	8.0	89	WSW			6		10			0	0		
Sub-Series.																			
Upsala	29.64	752.8	29.71	754.7	48.2	9.0	83	SW	10.1	4.5			8		WSW	0	0		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.63	727.1	30.08	764.0	45.3	7.4	53	N			2		1			0	0	Clear	The Observatory.
Zurich	28.45	722.6	30.11	764.8	46.6	8.1	58	E			1		6			0	0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.2 mm; Thermometer, —6.6 cent.; Relative Humidity, —17 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.96	760.9	94.3	23.5	72	S	0	0			7		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.93	760.1	72.1	22.3		NW			1		10						B. Stefanidès.
Valona			29.79	756.7	77.5	25.3		S			2		5			1.73	44.	Cloudy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.92	760.0	30.03	762.8	90.0	32.2	62	NE			1		6c			0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.21	767.3	30.28	769.1	46.8	8.2	84	Calm	0	0			10						Hon. J. Ferguson.
Brockville, Ontario			30.14	765.5	43	6.1		Calm	0	0		Haze	Fog		SW	0	0	Foggy	W. R. Bigg.
*Chatham, N. B			30.28	769.1	44	6.7	90	Calm	0	0		2k	8ks	W	W	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			30.35	770.9	47	8.3	80	SE	8	3.6			10ks			0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.91	759.7	30.11	764.8	45.9	7.7	78	SE			1		Fog			0	0	Foggy	James Smith, M. A.
Dalhousie, N. B	30.26	768.6	30.29	769.4	43.8	6.6	89	E			2							Raining	H. A. Johnson.
Esquimault, B. C	29.89	759.2	29.94	760.5	45.8	7.7	100	NE					10			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.21	767.3	40	4.4	100	NE	10	4.5			10n			0.28	7.1	Light rain	J. McWilliams.
Fredericton, N. B	30.19	766.8	30.26	768.6	45.0	7.2	93	NE	10	4.5			10n			0.395	10.04	Raining	Prof. Harrison.
*Fort Garry, Manitoba			30.28	769.1	27	—2.8	96	W	4	1.8		Haze	Fog	W	W	0	0	Foggy	James Stewart.
Goderich, Ontario	29.95	757.9	29.83	757.7	54.5	12.5	95	S			2	4k	6n	S				Threatening	H. J. Strang, M. A
Granton, Ontario	28.81	731.8	29.90	759.4	52	11.1	93	SE			1		10n			0.20	5.1	Cloudy	James Grant.
*Halifax, N. S	30.15	765.8	30.28	769.1	50	10.0	81	SE	10	4.5			10n		SE	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.60	751.8	29.97	761.2	53.5	11.9	90	E			2	9cs	0	SW		0.20	5.1	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	30.46	773.7	30.49	774.4	45	7.2	61	E			2		10n			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.78	756.4	30.15	765.8	49	9.4	96	NE	6	2.7			Fog		NE	Inap.	Inap.	Foggy	S. Woods, M. A
*Montreal, Quebec	29.93	760.2	30.13	765.3	50	10.0	80	Calm	0	0			Fog			0.04	1.0	Foggy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.32	744.7	30.02	762.5	43	6.1	92	NE	19	8.5			10n		S	0.13	3.3	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.22	742.2	29.97	761.2	47.7	8.7	85	S			1		10n					Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.22	742.2	29.95	760.7	57	13.9	75	SE	10	4.5			10n		S	0.12	3.0	Threatening	H. Morgan.
Port Hastings, N. S	30.34	770.6	30.38	771.6	48.4	9.1		SE	10	4.5						0	0	Dark	Peter Grant.
Port Stanley, Ontario	29.26	743.2	29.89	759.2	59	15.0	82	SW	13	5.8			10n		SW	0.11	2.8	Cloudy	M. Payne.
*Quebec, Quebec	29.82	757.4	30.15	765.8	47	8.3	92	NE	3	1.3			10n		NE	0.93	23.6	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.68	753.9	30.14	765.5	46	7.8	73	E	6	2.7		5cs	0	E		Inap.	Inap.	Fair	W. H. McIntyre.
St. John, N. B	30.06	763.5	30.23	767.8	49	9.4	85	E	6	2.7			10n			1.32	33.5		G. Murdock, C. E.
*Saugeen, Ontario	29.16	740.7	29.86	758.4	51	10.6	95	SE	5	2.2			10n		SE	0.36	9.1	Light rain	K. Stewart.
Stayner, Ontario			29.93	760.2	48	8.9	96	SE	5	2.2			10n		SE	0.10	2.5	Light rain	R. J. Cole.
Stratford, Ontario	28.61	726.7	29.88	758.9	50.9	10.5	94	SE	7	3.1			10n			0.204	5.18	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.40	772.1	30.43	772.9	46	7.8	79	SE	5	2.2			10s		E	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.61	752.1	29.99	761.7	54	12.2	92	E	7	3.1			10n		SW	0.10	2.5	Light rain	Magnetic Observatory.
Windsor, N S	30.18	766.6	30.28	769.1	49.0	9.4	78	SW	14	6.3			10n			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					46.0	7.8	84	E				Sm'e	Sm'e			0	0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.92	760.0	30.15	765.8	45	7.2	100	NW	2	0.9			Fog		Calm	1.25	31.7	Dense fog	
Alpena, Michigan	29.15	740.4	29.79	756.7	48	8.9	100	NE	31	13.9			10n		NE	1.27	32.3	Light rain	
Atlantic City, New Jersey	30.15	765.8	30.17	766.3	54	12.2	93	NW	4	1.8		0	0			0.01	0.3	Clear	
Augusta, Georgia	30.05	763.3	30.24	768.1	55	12.8	87	Calm	0	0			10s; fg		N; NW	0	0	Foggy	
Baltimore, Maryland	30.13	765.3	30.18	766.6	52	11.1	79	NW	1	0.4		2cs	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.13	765.3	30.16	766.1	55	12.8	83	N	8	3.6		0	Haze		Calm	0.23	5.8	Clear	
Bismarck, Dakota	28.42	721.9	30.16	766.1	33	0.6	80	Calm	0	0		8cs	0	Calm		0	0	Fair	
Boise City, Idaho	27.19	690.6	29.81	757.2	44	6.7	67	S	1	0.4		0	0			0	0	Clear	
Boston, Massachusetts	29.95	760.7	30.11	764.8	52	11.1	86	W	6	2.7		5cs	2s	W		1.17	29.7	Fair	
Brackettville, Texas	29.01	736.8	30.01	762.2	74	23.3	72	E	4	1.8			10s		Calm	0	0	Cloudy	
Breckenridge, Minnesota	29.25	742.9	30.31	769.9	29	— 1.7	100	NW	4	1.8			Fog		Calm	0	0	Foggy	
Brownsville, Texas	30.10	764.5	30.17	766.3	71	21.7	90	E	2	0.9		0	0			Inap.	Inap.	Clear	
Buffalo, New York	29.28	743.7	29.98	761.5	52	11.1	86	E	8	3.6			10s		E	0.01	0.3	Cloudy	
Burlington, Vermont	29.88	758.9	30.14	765.5	50	10.0	86	N	4	1.8		8c	0	SW		0.18	4.6	Fair	
Cairo, Illinois	29.88	758.9	30.28	769.1	51	10.6	78	NW	6	2.7		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona																			
Campo, California	27.45	697.2	30.02	762.5	51	10.6	71	NE	5	2.2		5cs	2s	Calm	Calm	0	0	Fair	
Cape Hatteras, N. Carolina	30.11	764.8	30.12	765.0	65	18.3	63	NE	7	3.1		0	0			0	0	Clear	
Cape Henry, Virginia	30.16	766.1	30.18	766.6	60	15.6	70	NW	1	0.4		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.18	766.6	30.19	766.8	64	17.8	78	N	6	2.7		0	0			0	0	Clear	
Cape May, New Jersey	30.15	765.8	30.18	766.6	60	15.6	76	NW	5	2.2		0	0			0	0	Clear	
Charleston, South Carolina	30.14	765.5	30.21	767.3	62	16.7	88	N	5	2.2		5c;cs	0	W; Calm		0	0	Fair	
Cheyenne, Wyoming	24.18	614.2	30.12	765.0	35	1.7	61	NW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.23	742.4	29.92	760.0	48	8.9	85	W	14	6.3			10n		W	1.00	25.4	Light rain	
Cincinnati, Ohio	29.37	746.0	30.02	762.5	51	10.6	72	W	8	3.6		8k	0	W		0.09	2.3	Cloudy	
Cleveland, Ohio	29.23	742.4	29.94	760.5	56	13.3	62	S	12	5.4			10s		S	0.04	1.0	Threatening	
Concho, Texas					61	16.1	77	NW	4	1.8		8cs		NW		0	0	Cloudy	
Corsicana, Texas	29.75	755.6	30.22	767.6	60	15.6	88	Calm	0	0		2cs	0	Calm		0	0	Clear	
Davenport, Iowa	29.50	749.3	30.15	765.8	43	6.1	91	NW	4	1.8			10s		NW	0.07	1.8	Cloudy	
Denison, Texas	29.45	748.0	30.25	768.3	57	13.9	81	N	6	2.7		10k	0	N		0.03	0.8	Cloudy	
Denver, Colorado	24.94	633.5	30.16	766.1	38	3.3	46	SE	4	1.8		5c	0	Calm		0	0	Fair	
Detroit, Michigan	29.16	740.7	29.82	757.4	51	10.6	78	SW	15	6.7			10s		SW	0.13	3.3	Threatening	
Dodge City, Kansas	27.63	701.8	30.01	762.2	38	3.3	90	E	2	0.9		0	0			0	0	Clear	
Dubuque, Iowa	29.39	746.5	30.10	764.5	48	8.9	85	NW	8	3.6			10s		NW	0.52	13.2	Cloudy	
Duluth, Minnesota	29.50	749.3	30.20	767.1	44	6.7	92	NE	6	2.7			10ks		NW	Inap.	Inap.	Cloudy	
Eagle Pass, Texas	29.30	746.5	30.11	764.8	73	22.8	81	SE	4	1.8		0	5ks		SE	0	0	Fair	
Eastport, Maine	30.07	763.8	30.14	765.5	49	9.4	100	E	20	8.9			10n		E	0.34	8.6	Heavy rain	
Erie, Pennsylvania	29.21	741.9	29.91	759.7	55	12.8	68	S	25	11.2		5ck	2cs	SW		0.21	5.3	Cloudy	
Escanaba, Michigan	29.36	745.7	30.02	762.5	44	6.7	92	N	28	12.5			10n		N	0.19	4.8	Light rain	
Florence, Arizona	28.45	722.6	30.05	763.3	68	20.0	42	E				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.24	615.7	30.24	768.1	49	9.4	30	NE	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.76	654.3			39	3.9	81	NW	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.73	755.1	30.28	769.1	49	9.4	85	NE	2	0.9		0	2s		NW	0	0	Fair	
Fort Griffin, Texas	28.95	735.3	30.22	767.6	60	15.6	82	Calm	0	0		2k	5s	W	Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.03	737.3	30.16	766.1	51	10.6	86	N	12	5.4			10s		Calm	0	0	Cloudy	
Fort Sully, Dakota	28.54	724.9	30.26	768.6	38	3.3	100	Calm	0	0			10s		Calm	0	0	Cloudy	
Galveston, Texas	30.18	766.6	30.22	767.6	69	20.6	90	E	4	1.8		0	0			0	0	Clear	
Grand Haven, Michigan	29.04	737.6	29.68	753.9	51	10.6	100	N	8	3.6			10n		N	1.16	29.5	Light rain	
Indianapolis, Indiana	29.29	744.0	30.07	763.8	49	9.4	85	W	5	2.2		2k	2s	W	W	0.09	2.3	Fair	
Indianola, Texas	29.20	741.7	30.22	767.6	71	21.7	85	NE	14	6.3		0	2ks		Calm	0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.15	765.8	30.18	766.6	68	20.0	79	N	6	2.7		2c	0	W		0	0	Fair	
Keokuk, Iowa	29.54	750.3	30.17	766.3	45	7.2	84	NW	8	3.6		0	0			0	0	Clear	
Key West, Florida	29.99	761.7	30.02	762.5	79.0	26.1	86	NE	11	4.9		5k; d	1ks	NE	E	0	0	Fair	
Kittyhawk, North Carolina	30.16	766.1	30.19	766.8	65	18.3	89	NE	10	4.5		0	0			0.19	4.8	Clear	
Knoxville, Tennessee	29.20	741.7	30.23	767.8	45	7.2	92	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.37	746.0	30.11	764.8	46	7.8	92	S	13	5.8			10n		S	0.25	6.3	Light rain	
La Mesilla, New Mexico	26.17	664.7	30.32	770.1	46	7.8	47	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					73	22.8	81	SE	2	0.9		5k	0	S		0	0	Fair	
Leavenworth, Kansas	29.46	748.3	30.33	770.4	44	6.7	84	N	3	1.3		5c	0	Calm		0	0	Fair	
Los Angeles, California	29.09	754.1	30.02	762.5	63	17.2	88	W	2	0.9			Fog			0	0	Foggy	
Louisville, Kentucky	29.57	751.1	30.14	765.5	51	10.6	78	W	12	5.4		0	0			0	0	Clear	
Lynchburg, Virginia	29.51	749.5	30.20	767.1	52	11.1	72	W	2	0.9		0	5s		N	0	0	Fair	
Maricopa Wells, Arizona					54	12.2	60	N				0	0			0	0	Clear	
Marquette, Michigan	29.36	745.7	30.07	763.8	46	7.8	69	N	16	7.2			10s		N	0	0	Cloudy	
Mason, Texas	28.57	725.7	30.30	769.6	67	19.4	74	Calm	0	0		2c	2s	Calm	Calm	0	0	Fair	
Memphis, Tennessee	29.94	760.5	30.26	768.6	58	14.4	81	N	5	2.2		0	Fog		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.23	742.4	29.92	760.0	46	7.8	100	N	24	10.7			10n			1.17	29.7	Light rain	
Mobile, Alabama	30.20	767.1	30.24	768.1	55.5	13.1	90	N	6	2.7		0	0			0	0	Clear	
Montgomery, Alabama	30.01	762.2	30.25	768.3	53.5	11.9	90	N	2	0.9		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	29.01	736.8	30.06	763.5	52	11.1	79	Calm	0	0		0	5s		SW	0	0	Fair	
Mt. Washington, N. H.	23.85	605.8	30.21	767.3	34	1.1	90	NW	13	5.8		5c	Fog	Calm	NW	0.87	22.1	Fair	
Nashville, Tennessee	29.66	753.4	30.20	767.1	59	15.0	81	W	1	0.4		2k	0	SW		0	0	Clear	
New Haven, Connecticut	30.02	762.5	30.14	765.5	56	13.3	80	N	2	0.9		0	Fog		Calm	0.87	22.1	Fair	
New London, Connecticut	30.07	763.8	30.12	765.0	57	13.9	81	Calm	0	0		0	Fog		Calm	0.86	21.8	Clear	
New Orleans, Louisiana	30.16	766.1	30.22	767.6	66	18.9	68	NE	4	1.8		0	Sm'e		NE	0	0	Clear	
Newport, Rhode Island	30.07	763.8	30.12	765.0	55	12.8	79	NW	7	3.1		2k	0	NW		1.16	29.5	Clear	
New York, New York	29.99	761.7	30.17	766.3	56	13.3	74	NW	3	1.3		0	Fog		Calm	0.28	7.1	Clear	
Norfolk, Virginia	30.14	765.5	30.20	767.1	57	13.9	93	NE	2	0.9		0	Fog		Calm	0	0	Clear	
North Platte, Nebraska	27.32	693.9	29.99	761.7	36	2.2	75	SE	10	4.5		2c	0	Calm		0	0	Clear	
Olympia, Washington Ter.	29.94	760.5	29.98	761.5	48	8.9	92	S	1	0.4			10n		Calm	0.56	14.2	Light rain	
Omaha, Nebraska	29.17	740.9	30.30	769.6	38	3.3	81	W	5	2.2		2cs	0	NW		0	0	Clear	
Oswego, New York	29.79	756.7	30.11	764.8	51	10.6	86	SE	7	3.1		8cs	0	W		0	0	Fair	
Pembina, Dakota	29.45	748.0	30.32	770.1	27	— 2.8	88	S	1	0.4			Fog		Calm	0	0	Foggy	
Philadelphia, Pennsylvania	30.13	765.3	30.18	766.6	55	12.8	86	NW	4	1.8		0	Fog			0	0	Clear	
Phœnix, Arizona					63	17.2	23	E				0	0			0	0	Clear	
Pike's Peak, Colorado	18.02	457.7	30.23	767.8	26	— 3.3	28	NW	13	5.8		5cs	0	NW		0	0	Fair	
Pioche, Nevada	24.21	614.9	29.98	761.5	52	11.1	23	SW	6	2.7		0	2s		Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.21	741.9	30.02	762.5	53	11.7	66	S	12	5.4			10s		SW	0	0	Cloudy	
Port Huron, Michigan	29.16	740.7	29.81	757.2	51	10.6	78	SW	16	7.2			10ks		SW	0.10	2.5	Threatening	
Portland, Maine	30.01	762.2	30.06	763.5	52	11.1	86	NW	10	4.5		8k	2s	N	Calm	1.64	41.7	Cloudy	
Portland, Oregon	29.96	761.0	30.06	763.5	56	13.3	100	Calm	0	0			10n		Calm	0.15	3.8	Light rain	
Prescott, Arizona	24.88	631.9	30.24	768.1	45	7.2	48	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	76	24.4	81	NE	12	5.4		0	2ks		Calm	0.56	14.2	Clear	
Red Bluff, California	29.56	750.8	29.92	760.0	60	15.6	44	NW	6	2.7		0	2s		Calm	0	0	Clear	
Rochester, New York	29.44	747.8	30.05	763.3	51	10.6	78	S	6	2.7			10s		SW	Inap.	Inap.	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.06	763.5	50.5	10.3	93	Calm	0	0		Haze	8s		Calm	0	0	Cloudy	
Sacramento, California	29.84	757.9	29.92	760.0	59	15.0	64	S	5	2.2		0	0			0	0	Clear	
St. Louis, Missouri	29.65	753.1	30.24	768.1	45	7.2	84	W	8	3.6		0	0			0.01	0.3	Clear	
St. Marks, Florida	30.16	766.1	30.18	766.6	64	17.8	88	N	5	2.2		5c	0	W		0	0	Fair	
St. Paul, Minnesota	29.33	745.0	30.18	766.6	42	5.6	91	NW	8	3.6			10s		NW	0.07	1.8	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.76	654.3	30.09	764.3	52	11.1	35	SE	6	2.7		0	0			0	0	Clear	
San Antonio, Texas	29.52	749.8	30.10	764.5	64	17.8	88	NE	3	1.3		2c	0	Calm		0	0	Clear	
San Diego, California	29.98	761.5	30.05	763.3	66	18.9	84	N	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.27	743.4	29.94	760.5	51	10.6	78	SW	20	8.9		0	9ks		SW	0.03	0.8	Fair	
Sandy Hook, New Jersey	30.14	765.5	30.16	766.1	58	14.4	81	NW	3	1.3		0	Haze			0.03	0.8	Clear	
San Francisco, California	29.94	760.5	30.01	762.2	54	12.2	93	SW	10	4.5			Fog		SW	0	0	Foggy	
Santa Fé, New Mexico	23.40	596.6	30.03	762.7	45	7.2	33	E	1	0.4		0	Haze			0	0	Clear	
Savannah, Georgia	30.12	765.0	30.22	767.6	61	16.1	94	NE	3	1.3		5c	Fog	W	E	0	0	Fair	
Shreveport, Louisiana	30.02	762.5	30.24	768.1	58	14.4	88	SE	1	0.4		0	0			0	0	Clear	
Smithville, North Carolina	30.17	766.3	30.21	767.3	61	16.1	94	N	5	2.2		0	1ks		N	0	0	Clear	
Springfield, Massachusetts	29.94	760.5	30.08	764.0	52	11.1	86	Calm	0	0		0	Fog		Calm	0.07	1.8	Clear	
Stanwix, Arizona																			
Stockton, Texas					58	14.4	76	SW	8	3.6		0	0			0	0	Clear	
Thatcher's Island, Mass.	30.04	763.0	30.10	764.5	52	11.1	93	NW	16	7.2		2k	5s	NW	NW	1.38	35.1	Clearing	
Toledo, Ohio	29.20	741.7	29.87	758.7	52	11.1	72	S	16	7.2			10s		SW	0.07	1.8	Cloudy	
Tucson, Arizona	27.63	701.8	30.18	766.6	66	18.9	68	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.17	766.3	30.20	767.1	67	19.4	84	N	12	5.4		8c	0	W		0	0	Fair	
Umatilla, Oregon	29.63	752.6			51	10.6	93	SE	8	3.6		1k	0	Calm		0	0	Clear	
Vicksburg, Mississippi	30.00	762.0	30.27	768.8	57	13.9	87	SE	1	0.4		0	0			0	0	Clear	
Virginia City, Montana	24.35	618.5	29.83	757.7	37	2.8	54	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.58	751.3	29.94	760.5	62	16.7	61	SW	1	0.4		0	5s		Calm	0	0	Fair	
Washington, D. C.	30.07	763.8	30.18	766.6	49	9.4	88	Calm	0	0		1c	Sm'e	W		0	0	Smoky	
Wickenburg, Arizona					48	8.9	10	S				0	0			0	0	Clear	
Wilmington, N. Carolina	30.12	765.0	30.20	767.1	59	15.0	87	NE	3	1.3		0	0			0	0	Clear	
Winnemucca, Nevada	25.72	653.3	30.08	764.0	36	2.2	36	NE	5	2.2		2cs	0	Calm		0	0	Fair	
Wood's Holl, Mass.	30.06	763.5	30.12	765.0	57	13.9	87	NW	7	3.1			10s		NW	0.64	16.3	Cloudy	
Yankton, Dakota	29.00	736.6	30.36	771.1	34	1.1	84	SW	5	2.2		1c	0	W		0.02	0.5	Clear	
Yuma, Arizona	29.80	756.9	29.96	761.0	68	20.0	52	E	3	1.3		5cs	0			0	0	Fair	
Sub-Series.																			
York Factory, B. A.	30.34	770.6	30.39	771.9	24.5	—4.2	94	SE	4	1.8		0	0			0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.95	760.7	29.97	761.2	80	26.7	86	SE	4.8	2.1		0	2ks		SE	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	80	26.7	78	NE	3	1.3		2c	2s			0	0		James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	81.5	27.5		N			3					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					86	30.0	75	E				8c	4ks	NE				Fair	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.82	757.4	29.84	757.9	82	27.8	83	E				5c	0					Clear	L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.00	762.0	84	28.9	75	E			2	5k	5ks	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			69.0	20.6	80	Calm			0	1cs	0			0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,888 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Plioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Plioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.00	762.0	56	13.3	54	12.2	93	WSW	14	6.3			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.32	770.1			65	18.3	68	NE	5	2.2			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.17	766.3	70	21.1	51	10.6	86	N&W			1					1.6	41.			Clear	
Naval Hospital, Yokohama, Japan	29.98	761.5	69	20.6	66	18.9	100	N			2		10n		NNE	0.75	19.1			Heavy rain	
Adams, Montevideo, Uruguay	30.12	765.0	61	16.1	53	11.7	80	SE			1		10		S	0	0	Light	S	D. clouds	
Alert, Vladivostok	29.87†	758.7†	65	18.3	65	18.3	84	SSE			2		10		SE					Foggy	
Alliance, Constantinople, Turkey.	30.06	763.5	73	22.8	73	22.8	76	N&E			2		10		S&W					Cloudy	
Ashuelot, Tientsin, China	30.22	767.6	54	12.2	47	8.3	28	NNW			2–3		1							D. clouds	
Canonicus, New Orleans, La.	30.18	766.6	49	9.4	63	17.2	83	NE			1		1							Clear	
Colorado, New York, N. Y.	30.22	767.6	64	17.8	57	13.9	75	WNW	6	2.7			8		NW	0.07	1.8			Dense fog	
Despatch, Constantinople, Turkey.	30.07	763.8	70	21.1	71	21.7	90	ENE			2		7		N					Misty	
Franklin, Norfolk, Va.	30.26	768.6	55	12.8	59	15.0	??	Calm	0	0			0			0	0			Clear	
Frolic, St. Thomas, W. I.	30.13	765.3	84	28.9	85	29.4	87	E			1		4kn		Calm	Blank	Blank	Smooth		D. clouds	
Gettysburg, Norfolk, Va.	29.68‡	753.9‡			67	19.4	100	W			1		9		Calm	Blank	Blank			D. clouds	
Kearsarge, Pt. de Galle, Ceylon	29.90	759.4			79	26.1	100	S			3		10		S	0.8	20.	Long	S&E	Thunder-storm	
Lackawana, Esquimault, B. C.	29.95	760.7			54	12.2	80	SW			1		2							D. clouds	
Marion, Smyrna, Turkey	29.90	759.4	78	25.6	78	25.6	78	W			1		10		Calm	Blank	Blank	Smooth		D. clouds	
Michigan, Chicago, Ill.	29.42	747.3	62	16.7	50	10.0	86	W			3		10		W					Raining	
Monocacy, Hakodadi, Japan	29.65	753.1	64	17.8	62	16.7	83	NNE			2		8		N&E	0	0	Smooth		D. clouds	
Monongahela, N. 35° 59′, W. 51° 43′	29.94	760.5	70	21.1	70	21.1	85	NNW			4–6		cks			Light	Light	Long	N&W	D. clouds	
New Hampshire, Port Royal, S. C.	30.38	771.6			64	17.8	89	N	9	4.0			6		N	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.05	763.3	63	17.2	60	15.6	79	Calm	0	0			10		Calm	0	0	Smooth		Misty	
Onward, Callao, Peru	30.05	763.3	71	21.7	69	20.6	85	SE			2		10					Long	W	Hazy	
Ossipee, Newport, R. I.	30.14	765.5	64	17.8	56	13.3	81	N			4		3		N					D. clouds	
Palos, Shanghai, China	30.10	764.5	66	18.9	55	12.8	39	WNW			4–6		0			0	0			Hazy	
Pensacola, Mare Island, Cal.	30.07	763.8			57	13.9	87	W			2–3		10			0	0			Overcast	
Plymouth, Norfolk, Va.	30.48	774.2	67	19.4	61	16.1	94	Calm			0		0							Clear	
Ranger, Nagasaki, Japan	29.97	761.2			63	17.2	78	SSW			2–4		10		NW					Rainy	
Rio Bravo, Brownsville, Texas	30.02	762.5			73	22.8	95	ENE			1		3		SW					Hazy	
Santee, Annapolis, Md.	30.28	769.1	61	16.1	57	13.9	69	WNW			1		1		E	0	0			Clear	
St. Louis, League Island, Pa	30.05	763.3	57	13.9	56	13.3	87	Calm	0	0			0			0	0			Clear	
Tennessee, Yokohama, Japan	29.97	761.2	70	21.1	67	19.4	100	N	2	0.9			10			0.62	15.7	Smooth		Raining	
Trenton, Marseilles, France	30.04	763.0	60	15.6	59	15.0	59	NW	8	3.6			0			0	0			Blue sky	
Vandalia, N. 36° 26′, E. 21° 55′	29.94	660.5	77	25.0	77	25.0	91	SE			4		10		SE			Moderate.	SE	Misty	
Wabash, Boston, Mass.	30.12	765.0	58	14.4	54	12.2	87	NW	6	2.7			3		NW	0.51	20.6			D. clouds	
Wyoming, Washington, D. C.	30.60†	777.2†	62	16.7	58	14.4		Calm			0		10							Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 29° 24′, E. 120° 42′			29.94*	760.5*	73	22.8	85	NW			5		10		NW	Moderate	NW	Raining	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 10′, W. 166° 20′			30.08†	764.0†	70	21.1		SSE			8		10		S	Chop.	SW	D. clouds	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N 29° 54′ W. 174° 48′			29.80	759.2*	73	22.8	100	Var.			3–5		2		Calm	Confused	NW	Raining	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.89*	759.2*	52	11.1		SSE			5		2		SSE				Captain Sargent.
S. S. Ohio, Mersey River			29.91	759.7	54	12.2	87	WSW			5				WSW				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Beaufort, S. C.			30.19	766.8	67	19.4	79	N	5	2.2		2c	0	SW				Clear	Capt. James Jorgensen.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 11, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.15	765.9	72.7	22.6	43	SE			2		1			0	0	Very fair	Michel.
Algiers			30.13	765.2	66.9	19.4	54	WSW			1		0			0	0	Clear	Peter.
La Calle			30.13	765.2	64.4	18.0	80	NW			3		8			0.354	9.0	Very cloudy	Fleury.
Tunis			30.08	763.9	65.1	18.4	69	NW			3		7			0.012	0.3	Very cloudy	Jacques.
Sfax																			Husson.
Saida			30.07	763.6	66.9	19.4		N			2		1			0	0	Very fair	Millot.
Tebessa			30.05	763.2				NW			2		4			0	0	Cloudy	Bourgeois.
Geriville			30.05	763.2	63.0	17.2	33	SSW			3		3			0	0	Pretty fair	Lemaillot.
Laghouat			30.11	764.9	68.0	20.0	32	NW			4		0			0	0	Clear	François.
Biskra			30.21	767.2	74.5	23.6	37	Calm			0		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.37	745.9	29.92	759.9	52.9	11.6	49	NE			4		7			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.13	740.5	29.94	760.4	46.0	7.8	61	NE			1		10			0	0		Dr. Wierzbiski.
Eperies	28.97	735.8	29.86	758.4	45.1	7.3	65	N			1		10ns		S	0	0		Julius Mikolik.
Gratz	28.66	728.0	29.92	760.0	49.1	9.5	72	SSW			2		3			0	0		Andreas Rospini.
Hermannstadt	28.37	720.5	29.80	756.9	46.9	8.3	87	W			1		10			0.362	9.20	Rainy	Prof. Reissenberger.
Kremsmünster	28.57	725.6	29.93	760.1	46.0	7.8	61	WSW			2		3			0	0		Prof. O. Wagner.
Lemberg	28.81	731.7	29.81	757.1	48.2	6.2	94	NE			1		10			0.134	3.4		Dr. T. Stanecki.
Pola	29.77	756.1	29.88	758.9	56.7	13.7	45	N			1		8s			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.54	750.3	29.82	757.5	48.9	9.4	74	Calm			0		10			0	0		Karl Stancel.
Trieste	29.83	757.6	29.93	760.2	57.0	13.9	50	E			1		0			0	0	Clear	P. Busin.
Vienna	29.22	742.1	29.92	759.9	50.2	10.1	49	NNW			1		0			0	0		I.R. Central Met.Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.44	722.3	29.97	761.3	43.7	6.5	89	SW			3		10			0.071	1.8	Light rain	
Brussels	29.69	754.0	29.89	759.1	51.8	11.0	82	W			4		8k		W; WNW; NW	0.260	6.60		Royal Observatory.
Furnes	29.91	759.7	29.93	760.3	54.5	12.5	62	NW			4		4			0.114	2.9		
Maeseyck	29.69	754.2	29.82	757.5	48.2	9.0	99	WSW			8		10			0.209	5.3	Raining	

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.33	745.0	29.43	747.5	45.9	7.7		WSW	25	11.2			3			0	0	Blue sky	W. Boswell.
Ardrossan	29.60	751.8	29.62	752.3	49	9.4		WNW			6		7					Showery	William McNeil.
Armagh, Observatory			29.83	757.7	47.9	8.8		SW	14	6.3			7					Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.83	757.7	50.0	10.0		W	49	21.9			8					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.97	761.2	48.6	9.2		W			3		9					Showery	J. Dreyer.
Bradford, Yorkshire	29.36	745.7	29.74	755.4	50.1	10.1		NW			5		7			0.04	1.0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	85	29.4		NE			1		4					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.90	759.4	55.0	12.8		W			2		7			Blank	Blank	D. clouds	H. Todd. [H. C.
Cardington			29.92	760.0	54.4	12.4		NW			4		6					D. clouds	John McLaren.
Chatham, School M. E	29.82	757.4	29.95	760.7	54.2	12.3		W			2		5					Hazy	Lt. W. G. Morris, R. E.
Dartmoor	28.62	726.9	30.10	764.5	49.0	9.4		NW			5		4					D. clouds	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.74	755.4	29.76	755.9	45	7.2		W			4		5					Squally	J. Mac Gowan.
Dover	29.92	760.0	29.94	760.5	54	12.2		NW			4		4					½ clouded	J. Costello.
Eccles, (near Manchester)			29.81	757.2	51.0	10.6		WSW	15.0	6.7			10					Showery	Thomas Mackereth.
Falmouth, Observatory	29.89	759.2	30.12	765.0	55.0	12.8		WNW			3		7					Overcast	The Staff.
Fort Napier, (Natal)	27.94	709.7	30.17	766.3	59.9	15.5		SE			3		9			Blank	Blank	Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.95	760.7	86	30.0		Calm?			1?		4					D. clouds	
Galway, Queen's College					56	13.3		NW			6		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.07	763.8	68.3	20.2		E			5		2					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.38	746.2	29.58	751.3	46.7	8.2		WSW			8		5			Blank	Blank	Squally	D. G. Maclean.
Great Yarmouth	29.83	757.7	29.84	757.9	53	11.7		WNW			4		3					Squally	G. T. Watson.
Greenwich, Royal Obs'y	29.77	756.1	29.94	760.5	55.7	13.2		W			4		3					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.86	758.4	30.08	764.0	57	13.9		WNW			4		3					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.14	765.5	54	12.2		SW			4		3			0.7	18.	D. clouds	M. P. Moyle.
Holyhead	29.83	757.7	29.88	758.9	52	11.1		W			6		3					D. clouds	John Tilston.
Jersey	29.83	757.7	30.12	765.0	57.3	14.1		NW			4		3			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory			29.95	760.7	53.6	12.0		W	17	7.6			7					Raining	The Staff.
Kingstown	29.88	758.9	29.91	759.7	53	11.7		WNW			5		7					D. clouds	George Mitchell.
Leicester, Museum			29.88	758.9	53.8	12.1		W			6		8					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.78	756.4	29.86	758.4	70.4	21.3		N			2		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.30	744.2	29.39	746.5	43	6.1		NW			3		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.00	762.0	81.8	27.7		E			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.66	753.4	29.85	758.2	54.7	12.6		WSW			6		5k		W	0.29	7.4	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.37	746.0	29.89	759.2	52.2	11.2		WSW			6		7					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.93	760.2	54	12.2		W			3		7					D. clouds	F. Lucas
Plymouth	30.01	762.2	30.08	764.0	55.5	13.1		NW			2		8					D. clouds	John Merrifield.
Roche's Point	30.02	762.5	30.06	763.5															W. Kennedy.
Saint Ann's Head	29.86	758.4	30.02	762.5	53	11.7		W			5		8					Overcast	John O. Walker.
Sandwick Manse, (Orkneys)			29.24	742.7	45.2	7.3		W	35	15.6			5					Rain & hail	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.74	755.4	74.6	23.7		SW			1		5			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.57	751.1	29.81	757.2	52.3	11.3		NW			4		4			0.26	6.6	Blue sky	W. F. Cooper.
Silloth Rectory	29.66	753.4	29.69	754.1	51.2	10.7	67	NW			6		2			0.390	9.91	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					49.1	9.5		W			5		10					Squally	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.36	745.7	41	5.0		WNW			6		10					Hailing	John Smith.
Stratfield Turgiss	29.76	755.9	29.98	761.5	54.9	12.7		W			1		6					D. clouds	Rev. C. H. Griffith, F. M. S.
Thurso			29.27	743.4	41	5.0		WSW			5		8					Showery	John Trotter.
Truro, Royal Institution			30.09	764.3	60	15.6		NW			6		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.08	764.0	53.5	11.9		W	26	11.6			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		WNW			6		5			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.11	764.8	30.15	765.8	71.0	21.7	60	SSE	12	5.4		0	0						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.24	768.1	49.0	9.4	82	S			1		0			0.01	0.3		Francis Abbott, F. R. A. S.
Leith, Restalrig Park			29.59	751.6	45.9	7.7		W			6		8k			0.21	5.3	Showery	Andrew Gibb.
Mauritius, Observatory	29.94	760.5	30.13	765.3	72.9	22.7	77	E	17.0	7.6		2	8	SE	E	0.24	6.1	Showery	C. Meldrum.
Melbourne, Observatory	30.06	763.5	30.15	765.8	52.5	11.4	82	E	3	1.3			3			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.44	747.8	48	8.9		WNW			8	10	5	NW		0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			28.96	735.6	43	6.1		W			7		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria, N. 40° 32′, W. 68° 15′			30.04	763.0	55	12.8		E			1		7			5*	SE	D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 39° 5′, W. 72° 45′			29.98	761.5	65	18.3		SW			3		8			2	SE	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 4′			30.18	766.6	49	9.4		ESE			5		10			4	N	Snowing	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 47° 50′, W. 35° 20′			29.86	758.4	61	16.1		SSE			6		10			5	SSE	Raining	Capt. Alex. Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.22	666.0			67.1	19.5	90	NE			2	5ck	3s;d	NE	NE	Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.45	748.0	29.50	749.2	47.1	8.4	87	SSW			6		10					Raining	
Fanöe	29.47	748.6	29.49	749.1	50.7	10.4	71	WNW			6		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.63	752.6	29.67	753.7	29.3	— 1.5	96	NE			8		8						
Thorshavn, (Faröe)	28.93	734.9	28.97	735.8	37.6	3.1	54	WNW			6		5					Snowing	
Vestervig	29.21	742.0	29.38	746.3	46.0	7.8	94	WSW			6		6					Hailing	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.57	751.1	30.12	765.1	55.4	13	65	N			1		5		NW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.80	759.2	30.00	762.0	58.6	14.8	72	NW			2		2		NW	0.024	0.6	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	29.96	760.9	30.04	762.9	60.6	15.9	33	N			3		0			0	0	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.48	748.7	30.05	763.2	51.6	10.9	69	SW			1		10			0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.93	760.1	30.09	764.2	52.3	11.3	95	N	4.0	1.8			10		N	0.024	0.6	Raining	Albert Cheux.
Beauvais	29.76	755.8	30.04	763.0	54.3	12.4	61	NNW			3		8		NW	0.010	0.25	Very cloudy	Normal School.
Besançon	29.22	742.1	30.12	765.1	49.1	9.5	65	SSW			2		8		W	6	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.26	743.1	30.17	766.4	50.9	10.5	52	NW			2	10c		NW		0	0	Covered	Normal School.
Bourges, Normal School	29.53	750.1	30.09	764.2	52.5	11.4	75	WSW			4		5		SW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.89	759.1	30.10	764.6	55.9	13.3	57	NNW			3		8		NNW	0.059	1.50		The Staff.
Carcassonne, Normal School	29.76	755.9	30.18	766.5	58.5	14.7	53	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.00	761.9	30.07	763.8	55.3	13.2	53	S			4		2		SE	0.063	1.6	Slightly cl'dy	Normal School.
Chartres, Normal School	29.39	746.6	29.97	761.1	54.0	12.2	83	NW			2		4			0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.67	753.5	29.99	761.7	49.3	9.6	76	S			4		10ck			0.004	0.1	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28 73	729.8	30.09	764.2	57.2	14.0	35	W			2		2		NW	0	0	Slightly cl'dy	Allnard, Director.
Commercy, Normal School	29.15	740.4	30.04	763.1	47.5	8.6	70	WSW			6		10n		WSW	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.90	734.0	30.04	763.0	56.3	13.5	31	NW			4		5		NW	0	0	½ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.92	759.9	30.11	764.9	57.9	14.4	80	W			4		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.80	756.8	30.11	764.7	52.3	11.3	93	W			4		10			0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.28	743.6	30.21	767.4	48.7	9.3	69	W			1		5		SE	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.07	763.7	30.17	766.2	59.7	15.4	49	N			3		5		N	0.059	1.5	½ covered	T. Carré, Director.
Mâcon, Normal School	29.39	746.4	30.04	763.0	52.3	11.3	68	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.98	736.0	30.04	762.9	46.4	8	77	NE			4		10		S	0	0	Covered	Normal School
Nismes, Normal School	29.84	757.8	30.04	763.0	59.4	15.2	72	NW			1		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.69	754.1	30.08	763.9	51.4	10.8	45	W			2		10			0	0	Covered	Bernard, Director.
Paris, Observatory	29.76	756.0	30.00	762.1	54.1	12.3	76	WNW			2		9km		WNW	0	0	Almost cov.	National Observatory.
Privas	29.01	736.8	30.09	764.2	51.8	11	42	N			4		1		N	0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.12	765.1	30.15	765.9	59.7	15.4	66	SW			5		10		SW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.94	760.4	30.02	762.6	56.1	13.4	75	W			2		2		W	0.059	1.5	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.11	736.3	30.19	766.8	58.1	14.5	69	W			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.44	747.7	30.15	765.8	59.0	15	61	ESE			1		2		NE	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.81	757.2	82.4	28										0.16	4.		L'Abbé Marchési.
Marseilles, Observatory			29.97	761.3	59.5	15.3	37	WNW			2–3		7			0	0	Partly cl'dy	The Staff.
Mont-Louis	24 90	632.5	30.22	767.5	50.0	10.0	16	WNW	9 4	4.17			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.72	754.9	30.00	761.9	54.9	12.7	79	NW			2–3		10		NW	0.004	0.1		Marié Davy, Director.
Perpignan			30.08	764.0	59.4	15.2	25	NW	18.6	8.33			2		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.37	542 9			32.9	0.5		N			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.58	573.6			42.4	5.8		N			1		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.84	758.0	30.01	762.2	54.5	12.5	82	NW			1		10		NW	0.008	0.2	Raining	E. Renou.
Toulouse, Observatory	29.48	748.9	30.21	767.4	57.7	14.3	26	NW			2		0			0	0		The Staff.
Tours	29.90	759.4	30.10	764.4	53.1	11.7	90	W			1		10					Rainy	C. Marquet.
Versailles, (near Paris)			30.01	762.2	54.0	12.2	83	NW			2		10			0.031	0.80	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.21	767.4	30.24	768.0	41.0	5.0	80	WNW	5.6	2.5			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 358 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.60	751.8	29.77	756.1	48.8	9.3	51	S			2		10			0	0		Prof. Arndt.
Breslau	29.38	746.2	29.91	759.6	48.4	9.1	63	S			3		3					Raining	Royal University Obs'y.
Carlsruhe	29.54	750.4	29.98	761.4	47.8	8.8	73	SW			1		10			0	0		Albert Senz.
Cassel	29.24	742.8	29.85	758.1	45.0	7.2	79	SSW			5		10	S		0	0		Dr. H. Möhl.
Crefeld	29.65	753.0	29.81	757.1	48.7	9.3	93	W			5		10					Drizzling	Director Lose.
Emden	29.70	754.3	29.73	755.2	53.4	11.9	62	W			6		5			0	0		Prof. Prestel.
Frankfort on the Main	29.60	751.7	29.96	761.0	48.4	9.1	57	SSW			3		8			0	0		Physical Society.
Friedrichshafen	28.61	726.6	30.07	763.7	46.8	8.2	68	WSW			2		4	SW		0.268	6.8	Raining	M. Wilhelm.
Hamburg	29.57	751.1	29.64	752.9	47.3	8.5	86	WSW			6		10			0.079	2.0	Stormy	Captain F. Hegemann
Kiel	29.56	750.7	29.57	751.1	49.6	9.8	94	WSW			4		10			0.112	2.85		Prof. G. Karsten.
Königsberg, (Prussia)	29.74	755.4	29.81	757.2	48.6	9.2	52	S										Fair	Prof. E. Luther.
Köslin			29.72	754.8	48.2	9.0		SW			6		4			0.059	1.5		H. Müller.
Leipsic, Observatory	29.46	748.2	29.89	759.1	49.6	9.8	51	SW			5		10	W		0	0		Prof. Bruhns.
Memel, Naval School	29.82	757.3	29.86	758.5	45.1	7.3	73	S			5		98						Reinbrechtvon Skalweit
Neufahrwasser	29.80	756.8	29.81	757.2	49.1	9.5	59	SSW			5		3			0	0		A. Lothes.
Posen	29.62	752.3	29.91	759.7	50.0	10.0	56	SW			3–4							Lightly cov.	Dr. Magener.
Strassburg Obs., (in Alsace	29.47	748.6	30.03	762.8	50.4	10.2	62	S			4		10	W				Raining	Dr. Schur.
Stuttgart	29.03	737.3	29.98	761.5	49.1	9.5	51	W			1		9	W		0.098	2.5	Raining	Prof. Schoder.
Treves, (Trier)	29.32	744.6	29.82	757.8	46.4	8.0	80	W			4		10			0.035	0.90	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.43	722.0	29.95	760.6	46.8	8.2	51	W			2		8	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.65	753.1	29.68	753.9	46.6	8.1	74	S			4		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.37	745.9	29.75	755.7	66.2	19.0		SW										Raining	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.81	757.1	29.86	758.4	83.8	28.8	73	SW	20.0?	8.9?			0			0	0	Blue sky	
Deesa	29.42	747.2	29.89	759.2	85.0	29.4	56	Calm					8	N	N	0	0	D. clouds	
Bombay	29.78	756.5	29.82	757.4	85.3	29.6	79	NW	6.0	2.7			5	NW		0	0	D. clouds	
Poona	27.80	706.0	29.79	756.7	77.2	25.1	76	SE					10		E	0.05	1.3	Thunder; lightn'g	
Lahore	29.14	740.2	29.89	759.3	77.4	25.2	50	NE	3.4	1.5			0			0	0		
Belgaum	27.33	694.2	29.89	759.1	72.7	22.6	92	W	2.0	0.9			9		W	0.22	5.6	Showery	
Bangalore																			
Roorkee	28.95	735.4	29.85	758.1	80.8	27.1	72	Calm	1.4	0.6			4			0	0		
Agra	29.28	743.8	29.85	758.1	82.3	27.9	65	N								0	0		
Trichinopoly																			
Nagpur	28.79	731.3	29.83	757.7	81.4	27.4	69	Calm	1.9	0.8			5			0	0	D. clouds	
Madras																			
Lucknow	29.47	748.4	29.84	757.9	80.3	26.8	78	NNE	0.9	0.4			7			0	0	D. clouds	
Allahabad	29.52	749.9	29.84	757.8	78.7	25.9	91	Calm	0.5	0.2			2			0	0	D. clouds	
Patna	29.66	753.3	29.84	757.9	84.8	29.3	70	E	0.4	0.2			6	E	E	0	0	D. clouds	
Hazaribagh	27.85	707.3	29.88	758.8	74.3	23.5	78	WNW	3.8	1.7			2			0.03	0.8	Showery	
Cuttack	29.76	756.0	29.84	758.0	80.0	26.7	81	SW	3.3	1.5			9			1.20	30.5	Thunder	
Calcutta (Alipore)	29.84	758.0	29.86	758.5	81.3	27.4	80	S	1.0	0.4			6			0	0	D. clouds	
Goalpara	29.46	748.2	29.85	758.2	79.2	26.2	82	SW	1.6	0.7			6	W		0	0	D. clouds	
Chittagong	29.80	756.9	29.89	759.3	81.7	27.6	87	WNW	2.5	1.1			0			0	0	Blue sky	
Sibsagar	29.56	750.8	29.90	759.4	77.0	25.0	86	ENE	0.9	0.4			9	WSW		0	0	D. clouds	
Rangoon																			
Jubbulpore	28.48	723.5	29.85	758.2	80.0	26.7	71	NW	1.0	0.4						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.09	561.0	30.52	762.5	36.7	2.6	49	N			4		10	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.06	560.3	30.04	763.0	35.2	1.9		NNE			1		6	S		0	0		Signora Ernesta Manfredi.
Udine	29.47	748.6	29.89	759.2	55.4	13.0	28	SW	0.7	0.3			4			0	0		Prof. Giovanni Clodig.
Padua	29.78	756.5	29.89	759.3	55.8	13.2	32	SW	3.8	1.7			5	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.70	754.3	29.89	759.3	58.1	14.5	34	S	7.4	3.3			3			0	0		Conte Alm. Da Schio.
Verona	29.71	754.6	29.93	760.3	61.2	16.2	40	SW			1		0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	28.92	734.5	29.96	761.0	50.4	10.2	63	Calm			0		10			0	0		Prof. Giuseppe Calza.
Milan	29.44	747.7	29.97	761.2	54.3	12.4	53	WNW			4		7	SSE		0	0		Ab. Gio. Capelli.
Pavia	29.61	752.1	29.96	761.0	52.7	11.5	50	N			1		7	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.05	737.9	29.98	761.4	51.4	10.8	61	SSE	0	0			8	W		0	0		Prof. P. F. Denza.
Mondovi	28.02	711.7	29.96	760.9	51.1	10.6	45	NW			2		5	S		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.74	755.3	29.96	760.9	61.5	16.4	42	SSW			2		8	NW		0	0		Prof. L. Vassallo.
Genoa	29.77	756.1	29.94	760.4	60.8	16.0	30	N	1.8	0.8			8			0	0		Prof. G. M. Garibaldi.
Piacenza	29.69	754.1	29.95	760.7	54.7	12.6	37	NW	3.1	1.4			3			0	0		Dott. G. Manzi.
Parma	29.62	752.3	29.94	760.4	57.2	14.0	43	SE			4		1			0	0		Prof. P. Pigorini.
Florence	29.69	754.2	29.95	760.8	57.0	13.9	41	NE			2		2	NNW		0	0		Cav. F. Meucci.
Leghorn	29.84	757.8	29.92	760.0	61.5	16.4	36	WNW	1.3	0.6			7			0	0		Prof. P. Monte.
Siena	28.71	729.1	29.93	760.1	54.9	12.7	37	NW	3.8	1.7			2	W		0	0		Prof. L. Toscani.
Urbino	28.37	720.5	29.95	760.6	45.6	7.5	83	NW			2		10			0.654	16.6		Prof. P. Serpieri.
Pesaro	29.87	758.7	29.92	760.0	51.8	11.0	78	W	45.4	20.3			8	WNW		0	0		Prof. Luigi Guidi.
Ancona	29.78	756.4	29.89	759.2	52.2	11.2	70	W			6		10	NW		0.126	3.2		Prof. F. DeBosis.
Grosseto	29.86	758.5	29.98	761.4	60.4	15.8	41	NNE			4		2	SE		0	0		Avv. P. Ponticelli.
Rome	29.69	754.2	29.91	759.7	61.2	16.2	50	N	9.8	4.4			2			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.67	753.7	29.87	758.8	65.5	18.6	57	N			2		7	W		0	0		Prof. L. Palmieri.
Lecce					64.4	18.0	75	N	18.6	8.3			8			0.079	2.0		Prof. C. De Giorgi.
Cosenza	28.95	735.4	29.85	758.1	64.4	18.0	80	SW	1.8	0.8			7			0.535	13.6		Prof. F. D. Conti.
Cagliari	29.74	755.5	29.93	760.3	63.1	17.3	41	NW			6		7	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.71	754.5	29.75	755.7	68.7	20.4	45	N			6		6	SE		0	0		Prof. F. Cafiero.
Palermo	29.58	751.4	29.84	757.8	64.6	18.1	64	NNW	11.9	5.3			8			0.287	7.3		Prof. G. Cacciatore.
Caltanissetta	27.91	708.8	29.85	758.1	58.5	14.7	65	NW			6		4	E		0.102	2.6		Prof. A. Pagani.
Syracuse	29.73	755.2	29.81	757.1	69.3	20.7	54	WNW			6		6	NW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.34	745.3	29.90	759.4	59.5	15.3	69	SW	0	0			4			0	0		Prof. F. Brioschi

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 555 m., or 1,821.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.38	746.2	29.47	748.6	72.5	22.5	83	SW	12	5.4		0	0			1.69	42.9		Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.22	589.9	30.31	769.8	51.4	10.8	82	NW	5.3	2.36		0	4ks		NW	0	0	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594,2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.90	759.4	29.90	759.4	53.6	12.0		WNW			4					0.063	1.6		
Groningen	29.65	753.1	29.71	754.5	52.0	11.1		NW			4					0.122	3.1		
Helder	29.76	755.9	29.76	755.9	52.9	11.6		W			5					0.322	8.2		
Hellevoetsluis			29.85	758.1	54.0	12.2	72	WNW			5								
Utrecht	29.76	755.9	29.81	757.1	54.7	12.6	61	WNW			4		5			0.146	3.7	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.16	740.6	29.21	742.0	46.0	7.8	75	SSW	24.6	11.0			10			0.322	8.2		
Brönö	29.00	736.6	29.04	737.6	42.4	5.8	85	SW	9	4			10			1.161	29.5	Raining	
Christiania	29.02	737.1	29.16	740.7	52.2	11.2	56	SW	11	5			9			0.035	0.9		
Tromsö	28.93	734.9	28.98	736.0	45.3	7.4	83	Calm	0	0			10			0.177	4.5		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.09	764.3	30.28	769.1	65.7	18.7	78	E	9.8	4.4			8			0	0		Dr. J. A. Sampaio
Campo Major	29.13	739.8	30.14	765.5	68.0	20 0	29	ESE	1.8	0.8			3	ESE		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.99	761.8	30.07	763.6	73.2	22.9	57	ESE	4.9	2.2			3			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.77	756.1	30.12	765.1	66.4	19.1	33	NNE	7.4	3.3			0			0	0		The Staff.
Ponta Delgada, (Azores)	30.17	766.2	30.24	768.0	66.9	19.4	70	E	3.1	1.4			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.48	748.8	29.91	759.6	48.2	9.0	57	SE	2	1			9						Astronomical Obs.
Wilna	29.54	750.3	29.96	761.0	46.4	8.0	60	S	2	1			9						Astronomical Obs.
Dorpat	29.62	752.3	29.86	758.5	47.7	8.7	63	SSW	11	5			0						Prof. Dr. Weihrauch
St. Petersburg	29.80	757.0	29.82	757.4	45.7	7.6	88	SW	13	6			10					Light rain	Central Physical Obs.
Kuopio	29.20	741.6	29.51	749.6	48.7	9.3	92	SW	13	6			10					Raining	Ch. Forsten.
Kieff	29.25	743.0	29.90	759.4	45.7	7.6	80	E	4	2			10					Raining	Physical Cabinet.
Nikolaiev	29.74	755.4	29.81	757.2	53.2	11.8	98	Calm	0	0			10						Kurdakof.
Kertch	29.88	759.0	29.90	759.5	60.1	15.6	98	E	4	2			10					Rain & fog	Lagorio.
Moscow	29.61	752.2	30.17	766.4	45.9	7.7	58	S	4	2			7						Meteorological Obs.
Lugan	29.81	757.1	30.01	762.3	54.9	12.7	77	E	22	10			10						Meteorological Obs.
Archangel	29.58	751.4	29.60	751.9	39.6	4.2	93	SSW	27	12			10						Ogorodnikof.
Tiflis	28.63	727.2	29.97	761.3	81.5	27.5	36	E	9	4			3						Physical Observatory.
Astrakhan	30.13	765.4	30.05	763.3	58.1	14.5	82	NE	4	2			9						Sebastianof.
Kasan	29.91	759.6	30.19	766.7	42.3	5.7	45	Calm	0	0			0						Physical Cabinet.
Orenburg	29.72	754.9	30.10	764.4	48.9	9.4		NE	13	6			3						Tschernischei.
Ekaterinburg	28.97	735.7	29.95	760.7	30.0	− 1.1	70	NW	22	10			9						Meteorological Obs.
Nukuss	29.86	758.4	30.09	764.3	57.2	14.0	51	SE	4	2			9						
Kasaly																			Bobrof.
Tashkend	28.59	726.2	30.31	769.8	55.4	13.0	93	Calm	0	0			1					Foggy	Michelson.
Barnaul	29.63	752.5	30.16	766.0	41.0	5.0	54	Calm	0	0			0						Meteorological Obs.
Yeniseisk	29.87	758.6	30.01	762.3	40.6	4.8	87	S	2	1			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.95	760.6	30.09	764.2	54.3	12.4	14	NW	22	10			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					32.9	0.5	87	Calm	0	0			0						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.87	707.8	30.08	764.0	61.3	16.3	49	SW	2.2	1.00		1	2	N		0	0	Clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.8	30.00	761.9	82.6	28.1	79	NE	8.9	4.0		4ck	0			0.012	0.3	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.00	762.1	30.10	764.6	75.0	23.9	48	E	11.0	4.91		2	4	E	E	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.90	759.4	82.8	28.2	92	SE	0	0		4cs	1k			0.874	22.20	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error. and temperature. Inches.	Barometer. Corrected for instrum'tal error. and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.23	742.4	29.27	743.4	42.8	6.0		S			4		10			0	0		
Umea	29.21	741.9	29.26	743.2	45.7	7.6	91	SW			7		10					Raining	
Hernosand	29.17	740.8	29.22	742.1	47.5	8.6	89	S			6		10			0	0		
Stockholm	29.27	743.4	29.45	747.9	48.6	9.2	87	S			6		10			0	0		
Wisby	29.57	751.0	29.63	752.5	48.9	9.4	79	SW			6		10			0.024	0.6		
Sub-Series.																			
Upsala	29.33	744.9	29.40	746.8	48.7	9.3	79	S	22.8	10.2			10			0.324	8.25		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.65	727.8	30.08	764.0	54.7	12.6	47	W			1		9			0	0	Covered	The Observatory.
Zurich	28.42	721.8	30.08	763.9	48.0	8.9	64	W			1		7			0.047	1.2	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +1.6 mm; Thermometer, —1.0 cent.; Relative Humidity, —24 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.80	756.8	71.2	21.8	78	SW	13	6.0			5		SW	0.677	17.2		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.72	754.8	74.8	23.8		SW			1		10			Blank	Blank		B. Stefanidès.
Valona			29.81	757.2	60.3	15.7		W			2		10			2.76	70.	Covered	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.85	758.2	29.97	761.1	90.0	32.2	52	NE			1		9c			0	0	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	30.07	763.8	30.14	765.5	49.8	9.9	93	NE	7	3.1			10						Hon. J. Ferguson.
Brockville, Ontario			29.89	759.2	55	12.8		S	1	0.4		0	5s		S	0.11	2.8	Fair	W. R. Bigg.
*Chatham, N. B.			30.13	765.3	49	9.4	96	NE	4	1.8			10n		NE	0.42	10.7	Light rain	G. A. Blair.
Charlottetown, P. E. Island.			30.15	765.8	49	9.4	93	SE	8	3.6			10n			0.82	20.8	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.69	754.1	29.88	758.9	50.2	10.1	94	SE			1		8s			0.186	4.72	Fair	James Smith, M. A.
Dalhousie, N. B.	30.18	766.6	30.21	767.3	46.5	8.1	98	E			3					0.19	4.8	Raining	H. A. Johnson.
Esquimault, B. C.	30.08	764.0	30.13	765.3	55.8	7.7	100	NE					10			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.11	764.8	39	3.9	100	NE	20	8.9		2k	8n	E	E	0.16	4.1	Cloudy	J. McWilliams.
Fredericton, N. B.	30.08	762.7	30.10	764.5	49.0	9.4	94	E	4	1.8			10			0.510	12.95	Misty	Prof. Harrison.
*Fort Garry, Manitoba			30.12	765.0	39	3.9	90	S	10	4.5		5k	5ks	S	S	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.03	737.3	29.82	757.4	47.6	8.7	97	NW			3		10n			†1.967	†49.96	Raining	H. J. Strang, M. A
Granton, Ontario	28.69	728.7	29.80	756.9	43	6.1	100	SW			2		10n			0.77	19.6	Cloudy	James Grant.
*Halifax, N. S.	29.92	760.0	30.05	763.3	52	11.1	100	E	13	5.8			10n			0.678	17.22	Heavy rain	F. Allison, M. A.
Hamilton, Ontario	29.44	747.8	29.81	757.2	46.2	7.9	85	SW			2	10cs	0	SW		0.40	10.2	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	30.21	767.3	29.23	742.4	49	9.4	67	E			2		10n			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.54	750.3	29.91	759.7	53	11.7	76	W	3	1.3			10ks		W	0.48	12.2	Cloudy	S. Woods, M. A.
*Montreal, Quebec	29.72	754.9	29.92	760.0	49	9.4	91	E	4	1.8			10n		Calm	0.21	5.3	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.14	740.1	29.84	757.9	46	7.8	92	N	16	7.2			10n		NE	0.96	24.4	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.05	737.9	29.80	756.9	49.7	9.8	92	SW			1		10n			0.59	15.0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.13	739.9	29.83	757.7	43	6.1	100	SW	11	4.9			10n		SW	0.58	14.7	Threatening	H. Morgan.
Port Hastings, N. S.	30.12	765.0	30.17	766.3	46.6	8.1		E	4	1.8						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.20	741.7	29.86	758.4	43	6.1	93	W	12	5.4			10n		W	0.27	6.9	Cloudy	M. Payne.
*Quebec, Quebec	29.70	754.4	30.03	762.7	46	7.8	92	NE	24	10.7			10n		NE	0.41	10.4	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.46	746.7	29.86	758.4	48	8.9	93	SE	3	1.3			10s		E	0.79	20.1	Light rain	W. H. McIntyre.
St. John, N. B.	29.89	759.2	30.05	763.3	52	11.1	93	SE	2	0.9			10ks			0.02	0.5		G. Murdock, C. E.
*Saugeen, Ontario	29.16	740.7	29.85	758.2	49	9.4	95	N	12	5.4			10n		N	0.21	5.3	Cloudy	K. Stewart.
Stayner, Ontario			29.79	756.7	45	7.2	96	NE	3	1.3			10n		NE	0.16	4.1	Threatening	R. J. Cole.
Stratford, Ontario	28.49	723.6	29.78	756.4	43.4	6.3	97	SW	11	4.9			10n			0.331	8.41	Rainy	C. J. MacGregor, M. A.
*Sydney, C. B.	30.19	766.8	30.22	767.6	47	8.3	93	E	1	0.4			10n		E	0.02	0.5	Cloudy	T. C. Hill.
*Toronto, Ontario	29.41	747.0	29.79	756.7	47	8.3	91	SW	4	1.8			10n		SW	0.13	3.3	Cloudy	Magnetic Observatory.
Windsor, N. S.	29.96	761.0	30.06	763.5	52.0	11.1	96	E	10	4.5			10n			0.30	7.6	Raining	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					48.0	8.9	85	NE				Sm'e	Sm'e			0	0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

† Rain-fall in 48 hours.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.70	754.4	29.93	760.2	50	10.0	93	Calm	0	0			10s		Calm	0.24	6.1	Cloudy	
Alpena, Michigan	29.34	745.2	30.01	762.2	40	4.4	91	NW	12	5.4			10n		NW	3.86	98.0	Light rain	
Atlantic City, New Jersey	29.96	761.0	29.78	756.4	55	12.8	93	Calm	0	0		5c	2s	S	SW	0.06	1.5	Cloudy	
Augusta, Georgia	29.98	761.5	30.17	766.3	58	14.4	91	NW	3	1.3		Haze	Sm'e	Calm	Calm	0	0	Clear	
Baltimore, Maryland	29.96	761.0	30.01	762.2	55	12.8	61	W	5	2.2		5k	2s	W	W	0.31	7.9	Fair	
Barnegat, New Jersey	29.95	760.7	29.97	761.2	57	13.9	87	NW	1	0.4			10s		SW	0.09	2.3	Cloudy	
Bismarck, Dakota	28.10	713.7	29.78	756.4	43	6.1	66	S	6	2.7			10s		S	0	0	Cloudy	
Boise City, Idaho	27.07	687.6	29.64	752.8	49	9.4	71	S	1	0.4		0	5s		Calm	0	0	Fair	
Boston, Massachusetts	29.85	758.2	30.00	762.0	53	11.7	86	W	2	0.9			10s		S	0	0	Cloudy	
Brackettville, Texas	28.99	736.3	30.00	762.0	70	21.1	62	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	29.12	739.6	30.15	765.8	36	2.2	90	SE	13	5.8		5k	0	W		0	0	Fair	
Brownsville, Texas	30.11	764.8	30.18	766.6	62	16.7	94	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.09	738.9	29.79	756.7	47	8.3	100	S	18	8.0			10n		S	0.40	10.2	Light rain	
Burlington, Vermont	29.67	753.6	29.93	760.2	51	10.6	93	E	8	3.6			10s		E	0.17	4.3	Cloudy	
Cairo, Illinois	29.92	760.0	30.33	770.4	50	10.0	78	N	3	1.3		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona																			
Campo, California	27.45	697.2	30.02	762.5	49	9.4	100	Calm	0	0			10n		Calm	0.01	0.3	Light rain	
Cape Hatteras, N. Carolina	29.98	761.5	29.99	761.7	63	17.2	88	NW	4	1.8		0	0			0	0	Clear	
Cape Henry, Virginia	29.99	761.7	30.02	762.5	61	16.1	82	W	12	5.4			10s		NW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.03	762.7	30.05	763.3	69	20.6	75	W	12	5.4		0	0			0	0	Clear	
Cape May, New Jersey	29.96	761.0	29.99	761.7	58	14.4	81	N	3	1.3		5cs	2s	SW	SW	0.11	2.8	Fair	
Charleston, South Carolina	30.05	763.3	30.12	765.0	63	17.2	83	W	6	2.7		0	0			0	0	Clear	
Cheyenne, Wyoming	24.02	610.1	29.96	761.0	47	8.3	37	W	4	1.8			10s		Calm	0	0	Cloudy	
Chicago, Illinois	29.48	748.8	30.19	766.8	40	4.4	82	NW	7	3.1		0	0			0.02	0.5	Clear	
Cincinnati, Ohio	29.46	748.3	30.11	764.8	47	8.3	77	W	5	2.2		0	Fog		N	0	0	Clear	
Cleveland, Ohio	29.23	742.4	29.96	761.0	47	8.3	85	W	20	8.9			10n		W	0.51	13.0	Light rain	
Concho, Texas					61	16.1	77	SE	4	1.8		0				0	0	Clear	
Corsicana, Texas	29.70	754.4	30.17	766.3	62	16.7	88	S	4	1.8		0	0			0.01	0.3	Clear	
Davenport, Iowa	29.64	752.8	30.31	769.9	39	3.9	81	Calm	0	0		Haze	0	Calm		0	0	Clear	
Denison, Texas	29.36	745.7	30.15	765.8	64	17.8	88	S	3	1.3		0	0			Inap.	Inap.	Clear	
Denver, Colorado	24.76	628.9	29.98	761.5	52	11.1	23	S	5	2.2			8s		Calm	0	0	Cloudy	
Detroit, Michigan	29.29	744.0	29.96	761.0	42	5.6	83	NW	13	5.8			10n		NW	0.30	7.6	Light rain	
Dodge City, Kansas	27.44	697.0	29.74	755.4	49	9.4	86	SE	16	7.2		2c	Sm'e	SW	SE	0	0	Fair	
Dubuque, Iowa	29.56	750.8	30.39	771.9	38	3.3	80	N	1	0.4		0	0			0	0	Clear	
Duluth, Minnesota	29.59	751.6	30.29	769.4	40	4.4	83	E	3	1.3			10ks		E	0.10	2.5	Cloudy	
Eagle Pass, Texas	29.36	745.7	30.09	764.3	67	19.4	79	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.94	760.5	30.01	762.2	51	10.6	100	NE	10	4.5			Fog		Calm	2.20	55.9	Foggy	
Erie, Pennsylvania	29.12	739.6	29.84	757.9	46	7.8	92	SW	16	7.2			10n			0.16	4.1	Light rain	
Escanaba, Michigan	29.53	750.0	30.20	767.1	42	5.6	66	N	20	8.9			10s		N	0.17	4.3	Cloudy	
Florence, Arizona	28.37	720.6	29.97	761.2	75	23.9	33	S				0	8s		S	0	0	Fair	
Fort Bayard, New Mexico	24.16	613.6	30.16	766.1	53	11.7	36	NE	12	5.4		0	0			0	0	Clear	
Fort Craig, New Mexico	25.63	651.0			48	8.9	43	S	1	0.4		0	5s		S	0	0	Fair	
Fort Gibson, Indian Ter	29.62	752.3	30.16	766.1	60	15.6	70	E	7	3.1		0	8s		W	0	0	Fair	
Fort Griffin, Texas	28.85	732.8	30.11	764.8	59	15.0	81	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.81	733.8	29.99	761.7	58	14.4	87	Calm	0	0		2k	0	Calm		0	0	Clear	
Fort Sully, Dakota	28.17	715.5	29.83	757.7	45	7.2	84	Calm	0	0		0	5s		SE	0	0	Fair	
Galveston, Texas	30.15	765.8	30.20	767.1	70	21.1	95	SE	4	1.8		0	0			0	0	Clear	
Grand Haven, Michigan	29.45	748.0	30.11	764.8	43	6.1	87	NW	12	5.4		0	4s		NW	0.54	13.7	Fair	
Indianapolis, Indiana	29.40	746.7	30.19	766.8	44	6.7	84	W	5	2.2		0	0			0	0	Clear	
Indianola, Texas	30.17	766.3	30.20	767.1	71	21.7	79	SE	4	1.8		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.10	764.5	30.12	765.0	60	15.6	82	NE	5	2.2		0	0			0	0	Clear	
Keokuk, Iowa	29.64	752.8	30.27	768.8	43	6.1	83	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Key West, Florida	29.96	761.0	30.00	762.0	79.0	26.1	82	NE	9	4.0		5c	0	SW		0.12	3.0	Fair	
Kittyhawk, North Carolina	30.00	762.0	30.02	762.5	62	16.7	88	W	8	3.6		8ck	0	W		0	0	Fair	
Knoxville, Tennessee	29.21	741.9	30.24	768.1	46	7.8	92	Calm	0	0		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.52	749.8	30.29	769.4	37	2.8	100	Calm	0	0			Fog			0.03	0.8	Foggy	
La Mesilla, New Mexico	26.14	663.9	30.29	769.4	52	11.1	53	SW	1	0.4		0	0			0	0	Clear	
Laredo, Texas					70	21.1	79	SE	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.39	746.5	30.26	768.6	41	5.0	73	N	1	0.4		0	Fog			0	0	Clear	
Los Angeles, California	29.68	753.9	30.01	762.2	63	17.2	83	Calm	0	0			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.55	750.6	30.22	767.6	48	8.9	85	W	5	2.2		0	Fog		Calm	0	0	Foggy	
Lynchburg, Virginia	29.38	746.2	30.05	763.3	58	14.4	53	Calm	0	0		0	0			0	0	Clear	
Maricopa Wells, Arizona					67	19.4	41	NE				5cs	0	Calm		0	0	Fair	
Marquette, Michigan	29.47	748.5	30.20	767.1	40	4.4	73	NW	12	5.4			10s		N	0	0	Cloudy	
Mason, Texas	28.52	724.4	30.28	769.:	60	15.6	81	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.99	761.7	30.31	769.9	51	10.6	79	NE	3	1.3		0	2s; fg		SW; Calm	0	0	Fair	
Milwaukee, Wisconsin	29.52	749.8	30.24	768.1	38	3.3	80	NW	10	4.5		0	1ks			0.10	2.5	Clear	
Mobile, Alabama	30.18	766.6	30.22	767.6	59	15.0	90	N	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	30.00	762.0	30.24	768.1	58	14.4	81	N	4	1.8		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	28.97	735.8	30.02	762.5	50	10.0	71	SW	10	4.5			10n		SW	0.10	2.5	Light rain	
Mt. Washington, N. H.	23.75	603.2	30.11	764.8	36	2.2	90	W	30	13.4			Fog		W	0	0	Foggy	
Nashville, Tennessee	29.74	755.4	30.29	769.4	48	8.9	85	Calm	0	0		0	Fog		Calm	0	0	Clear	
New Haven, Connecticut	29.83	757.7	29.95	760.7	56	13.3	87	N	3	1.3		5ks	Fog	SW	Calm	0.04	1.0	Clearing	
New London, Connecticut	29.93	760.2	29.98	761.5	58	14.4	93	SE	9	4.0			10s		SW	0	0	Cloudy	
New Orleans, Louisiana	30.15	765.8	30.21	767.3	68	20.0	74	NE	3	1.3		0	0			0	0	Clear	
Newport, Rhode Island	29.94	760.5	29.99	761.7	60	15.6	76	SE	7	3.1			10ks		S	0	0	Threatening	
New York, New York	29.80	756.9	29.98	761.5	53	11.7	86	W	5	2.2		5c; ck	Fog	SW		0.04	1.0	Foggy	
Norfolk, Virginia	29.97	761.2	30.03	762.7	60	15.6	91	NW	4	1.8			10s		W	0	0	Cloudy	
North Platte, Nebraska	27.07	687.6	29.65	753.1	44	6.7	75	SE	24	10.7			10s		SE	0	0	Cloudy	
Olympia, Washington Ter.	30.10	764.5	30.14	765.5	48	8.9	92	SW	1	0.4			10n		Calm	0.06	1.5	Light rain	
Omaha, Nebraska	29.09	738.9	30.20	767.1	42	5.6	83	SE	2	0.9		2c	0	NW		0	0	Clear	
Oswego, New York	29.55	750.6	29.87	758.7	53	11.7	66	S	8	3.6		0	8s		SW	0.21	5.3	Cloudy	
Pembina, Dakota	29.27	743.4	30.11	764.8	30.5	4.2	77	SE	12	5.4			8s		Calm	0	0	Fair	
Philadelphia, Pennsylvania	29.95	760.7	30.00	762.0	55	12.8	93	W	5	2.2		8cs	0	SW		0.19	4.8	Fair	
Phœnix, Arizona					68	20.0	25	E				2c	5ck	W	W	0	0	Cloudy	
Pike's Peak, Colorado	17.91	454.9	30.12	765.0	26	3.3	77	W	33	14.8		2cs	8s	W	W	0	0	Cloudy	
Pioche, Nevada	24.01	609.8	29.78	756.4	56	13.3	29	S	10	4.5		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.15	740.4	29.96	761.0	48	8.9	70	W	16	7.2			10s		W	0.01	0.3	Cloudy	
Port Huron, Michigan	29.21	741.9	29.88	758.9	41	5.0	91	NW	16	7.2			10n		NW	0.44	11.2	Light rain	
Portland, Maine	29.97	761.2	30.02	762.5	50	10.0	93	NE	11	4.9			Fog			0	0	Dense fog	
Portland, Oregon	30.11	764.8	30.21	767.3	48	8.9	92	Calm	0	0		0	0			0.32	8.1	Clear	
Prescott, Arizona	24.82	630.4	30.18	766.6	48	8.9	48	S				5cs	0	S		0	0	Fair	
Punta Rassa, Florida	30.03	762.7	30.04	763.0	74	23.3	81	NE	12	5.4		0	0			0.51	13.0	Clear	
Red Bluff, California	29.61	752.1	29.96	761.0	59	15.0	70	S	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.21	741.9	29.82	757.4	48	8.9	85	SW	8	3.6			10n		SW	0.19	4.8	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.61	752.1	30.18	766.6	50	10.0	96	Calm	0	0		Haze	8s		Calm	0.91	23.	Cloudy	
Sacramento, California	29.87	758.7	29.96	761.0	58	14.4	81	S	9	4.0		2c	0	S		0	0	Fair	
St. Louis, Missouri	29.71	754.6	30.31	769.9	47	8.3	85	Calm	0	0		0	Sm'e			0	0	Clear	
St. Marks, Florida	30.15	765.8	30.16	766.1	59	15.0	94	N	4	1.8		0	0			0	0	Clear	
St. Paul, Minnesota	29.40	746.7	30.27	768.8	34	1.1	90	NE	2	0.9			Fog		Calm	0	0	Foggy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.61	647.9	29.84	757.9	63	17.2	30	SE	10	4.5			10s		Calm	0	0	Cloudy	
San Antonio, Texas	29.49	749.0	30.08	764.0	62	16.7	88	Calm	0	0		0	5ks		Calm	0	0	Fair	
San Diego, California	29.98	761.5	30.05	763.3	65	18.3	83	NW	8	3.6			10s		W	0	0	Cloudy	
Sandusky, Ohio	29.31	744.5	30.00	762.0	45	7.2	84	W	28	12.5			10ks		W	0.03	0.8	Cloudy	
Sandy Hook, New Jersey	29.95	760.7	29.97	761.2	57	13.9	87	N	1	0.4		10ck	0	SW		0.07	1.8	Cloudy	
San Francisco, California	29.94	760.5	30.01	762.2	54	12.2	93	W	14	6.3		Haze	5s		Calm	Inap.	Inap.	Fair	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	48	8.9	23	SE	5	2.2		Haze	2s		Calm	0	0	Fair	
Savannah, Georgia	30.04	763.0	30.14	765.5	63	17.2	78	NW	4	1.8		0	0			0	0	Clear	
Shreveport, Louisiana	30.00	762.0	30.22	767.6	63	17.2	89	E	4	1.8		0	2s		Calm	0	0	Fair	
Smithville, North Carolina	30.06	763.5	30.10	764.5	63	17.2	83	W	6	2.7		0	0			0	0	Clear	
Springfield, Massachusetts	29.76	755.9	29.89	759.2	54	12.2	93	Calm	0	0			10n			0.15	3.8	Light rain	
Stanwix, Arizona																			
Stockton, Texas					60	15.6	76	S	8	3.6		0	0			0	0	Clear	
Thatcher's Island, Mass	30.05	763.3	30.11	764.8	52	11.1	93	Calm	0	0		5cs	2s	SW	SW	0	0	Foggy	
Toledo, Ohio	29.33	745.0	30.01	762.2	47	8.3	69	W	12	5.4		0	8s		NW	0.20	5.1	Clearing	
Tucson, Arizona	27.52	699.0	30.07	763.8	67	19.4	64	W				0	8s		SW	0	0	Fair	
Tybee Island, Georgia	30.09	764.3	30.12	765.0	63	17.2	83	W	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.73	755.1			48	8.9	77	W	8	3.6			8s		W	0.03	0.8	Cloudy	
Vicksburg, Mississippi	30.01	762.2	30.27	768.8	59	15.0	76	E	12	5.4		0	0			0	0	Clear	
Virginia City, Montana	24.17	613.9	29.65	753.1	45	7.2	60	E	2	0.9			10s		Calm	0	0	Cloudy	
Visalia, California	29.64	752.8	30.01	762.2	52	11.1	79	SE	1	0.4		0	0			0	0	Clear	
Washington, D. C.	29.91	759.7	30.02	762.5	56	13.3	53	NW	10	4.5		2k	5s	SW	W	0.23	5.8	Clearing	
Wickenburg, Arizona					46	7.8		SW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.00	762.0	30.08	764.0	61	16.1	88	SW	4	1.8		0	0			0	0	Clear	
Winnemucca, Nevada	25.57	649.5	29.93	760.2	49	9.4	71	SW	6	2.7		0	2s		SW	Inap.	Inap.	Fair	
Wood's Holl, Mass	29.97	761.2	30.02	762.5	60	15.6	88	S	4	1.8		0	2s		S	0	0	Fair	
Yankton, Dakota	28.85	732.8	30.18	766.6	38	3.3	86	SE	4	1.8		5c	0	W		0	0	Fair	
Yuma, Arizona	29.72	754.9	29.89	759.2	68	20.0	52	Calm	0	0		5k	0	SW		0	0	Fair	
Sub-Series.																			
York Factory, B. A.	30.22	767.6	30.37	771.4	27.5	— 2.5	94	S	10	4.5		2ck	3s	SE	SE	0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.93	760.2	29.95	760.7	82	27.8	78	NE	2.4	1.1		8k	0	NE		Inap.	Inap.	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	81	27.2	82	N	3	1.3		2ck	2s	Calm	N	0	0		James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	84	28.9		NE			1					0.78	19.8	Cloudy	F. M. Everett.
St. Thomas, W. I.					83	28.3	75	E				4c	2n	E				Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.81	757.2	29.83	757.7	83	28.3	83	NE				2c	2s		NE				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			29.99	761.7	83	28.3	70	E			2	3c	6k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			66.0	18.9	87	Calm			0	8cs	0			0.49	12.4	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,676 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.: Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.98	761.5	58	14.4	56	13.3	87	SSW	12	5.4			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.30	769.6			67	19.4	74	N	2	0.9						0	0			D clouds	
Navy Yard, Portsmouth, N.H	30.05	763.3	67	19.4	53	11.7	90	E			1		10							Rain & fog	
Naval Hospital, Yokohama, Japan	29.48	748.8	73.5	23.1	73	22.8	84	SW			6		1k		SW	1.25	31.7			Fair	
Adams, Montevideo, Uruguay	30.16	766.1	59	15.0	55	12.8	87	E			1		9		E	Light	Light	Light	E	D. clouds	
Alert, Vladivostok	29.10†	739.1†	59	15.0	59	15.0	88	SSW			3–5		7		SW					Squally	
Alliance, Constantinople, Turkey.	29.98	761.5	73	22.8	73	22.8	72	S&W			3		7		S&W					Cloudy	
Ashuelot. Tientsin, China	30.10	764.5	60	15.6	50	10.0	39	NNE			1–2		1		Calm					D. clouds	
Canonicus, New Orleans, La	30.21	767.3	50	10.0	67	19.4	84	NNE			2		2							Clear	
Colorado, New York, N. Y.	30.04	763.0	63	17.2	55	12.8	87	W	6	2.7			8		WSW	0.02	0.5			Foggy	
Despatch, Constantinople, Turkey.	29.90	759.4	72	22.2	72	22.2	76	SW			2		5		S					Cloudy	
Franklin, Norfolk, Va.	30.11	764.8	58	14.4	60	15.6	??	W	6	2.7			9		W	0	0			Cloudy	
Frolic, St. Thomas, W. I.	30.09	764.3	83	28.3	84	28.9	91	ENE			2		7kn		Calm			Smooth		Showery	
Gettysburg, Naples, Italy	29.69‡	754.1‡			65	18.3	100	N			0–1		9		Calm	Blank	Blank			D. clouds	
Kearsarge, Pt. de Galle, Ceylon	29.89	759.2			79	26.1	100	S			2		10		S	1.95	49.5	Long	S&E	Raining	
Lackawana, Esquimault, B. C.	30.16	766.1			48	8.9	85	Calm			0		10		S					D. clouds	
Marion, Smyrna, Turkey	29.95	760.7	73	22.8	73	22.8	95	WNW			1		1		Calm	0	0	Smooth		D. clouds	
Michigan, Chicago, Ill.	29.65	753.1	55	12.8	41	5.0	83	WNW			2		0							Fair	
Monocacy, Hakodadi, Japan	29.18	741.2	70	21.1	67	19.4	100	ESE			1–2		10			Light	Light	Smooth		Raining	
Monongahela, N. 36° 47′, W. 48° 24′	29.87	758.7	73	22.8	73	22.8	95	NNW			4		8k			Light	Light	Moderate.	N&W	D. clouds	
New Hampshire, Port Royal, S. C.	30.32	770.1			69	20.6	80	NW	12	5.4			0			0	0			Blue sky	
Omaha, Valparaiso, Chili	30.00	762.0	61.5	16.4	58	14.4	91	N	5	2.2			10		N	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.06†	763.5†	71	21.7	69	20.6	85	SE			2		10					Long	W	Overcast	
Ossipee, L. 41° 24′, W. 71° 11′ 30″	30.02	762.5	62	16.7	62	16.7	88	SE			4		7		SE			Ground	SE	D. clouds	
Palos, Shanghai, China	30.22	767.6	59	15.0	49	9.4	57	WNW			2		0			0	0			Clear	
Pensacola, Mare Island, Cal.	30.03	762.7			58	14.4	??	SW			2–3		7			0	0			Overcast	
Plymouth, Norfolk, Va.	30.30	769.6	65	18.3	61	16.1	88	WSW			0–1		10		SW					Cloudy	
Ranger, Nagasaki, Japan	30.14	765.5			63	17.2	83	W			1–4		6		NW					Rainy	
Rio Bravo, Brownsville, Texas	29.95	760.7			66	18.9	94	E			1		1		SSE					Misty	
Santee, Annapolis, Md.	30.06	763.5	62	16.7	56	13.3	74	NW			2		9		SW	0.22	5.6			Cloudy	
St. Louis, League Island, Pa	29.94	760.5	58	14.4	56	13.3	94	SW	3	1.3			4		SW	0.25	6.3			Fair	
Tennessee, Yokohama, Japan	29.50	749.3	77	25.0	75	23.9	81	SSW	30	13.4			1			1.75	44.5	Moderate.	S&W	Squally	
Trenton, Marseilles, France	30.08	764.0	65	18.3	62	16.7	41	N	11	4.9			0			0	0			Blue sky	
Vandalia, N. 37° 01′, E. 19° 28′	29.87	758.7	73	22.8	73	22.8	58	W			5		5		W			Moderate.	WNW	D. clouds	
Wabash, Boston, Mass.	30.02	762.5	57	13.9	54	12.2	87	E	2	0.9			10		Calm	0	0			Hazy	
Wyoming, Washington, D. C.	30.45†	773.4†	65	18.3	60	15.6		WNW			1		8		WNW					D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 28° 37′, E. 128° 46′			30.33*	770.4*	62	16.7	66	NW			3		2		NW	Moderate	NW	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 27′, W. 160° 28′			30.42†	772.7†	71	21.7		S			6		2		SSE	Smooth	SW	Blue sky	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N 20° 56′ W. 179° 45′			29.98	761.5	75	23.9	72	Var.			2–3		8		N	Confused	NW	Raining	Capt. H. Parsell.
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12, weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.85*	758.2*	59	15.0		NNW			6		3		NNW				Captain Sargent.
S. S. Ohio, N. 51° 31′, W. 8° 54′			30.07	763.8	59	15.0	88	WNW			6		10		WNW				Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Off Hilton Head, S. C.			30.15	765.8	68	20.0	95	WNW	7	3.1		0	0			Smooth		Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 12, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.21	767.2	73.8	23.2	50	E			1		0			0	0	Clear	Michel.
Algiers			30.17	766.4	68.7	20.4	65	E			1		0			0	0	Clear	Peter.
La Calle			30.24	768.0	70.2	21.2	72	NW			3		3			0.079	2.0	Pretty fair	Fleury.
Tunis			30.19	766.9	71.1	21.7	50	NW			4		8			0	0	Very cloudy	Jacques.
Sfax																			Husson.
Saida			30.13	765.2	70.5	21.4		E			2		1			0	0	Very fair	Millot.
Tebessa			30.16	766.0				SW			2		1			0	0	Very fair	Bourgeois.
Geriville			30.04	762.9	61.3	16.3	56	SW			2		2			0	0	Fair	Lemaillot.
Laghouat			30.20	767.0	71.6	22.0	27	W			4		0			0	0	Clear	François.
Biskra			30.29	769.4	75.7	24.3	38	Calm			0		4			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.46	748.2	30.01	762.2	56.7	13.7	47	SW			5		4			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.11	739.5	29.89	759.1	50.0	10.0	57	W			4		10			0	0		Dr. Wierzbiski.
Eperies	29.01	736.8	29.90	759.4	45.5	7.5	73	S			2		9k;s		Calm	0.020	0.50		Julius Mikolik.
Gratz	28.74	730.1	30.00	761.9	52.9	11.6	80	SSW			2		5			0.039	1.0		Andreas Rosplni.
Hermannstadt	28.48	723.3	29.92	759.9	46.9	8.3	55	WNW			3		5			0.287	7.30		Prof. Reissenberger.
Kremsmünster	28.61	726.6	29.96	761.0	46.9	8.3	74	WNW			6		7			0.256	6.5		Prof. C. Wagner.
Lemberg	28.80	731.4	29.79	756.7	45.1	7.3	86	NW			2		7			0.059	1.5		Dr. T. Stanecki.
Pola	29.90	759.4	30.01	762.3	60.3	15.7	53	WNW			1		4cs			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.66	753.3	29.94	760.5	52.2	11.2	71	NW			2		6			0	0		Karl Stancel.
Trieste	29.95	760.6	30.05	763.2	57.2	14.0	63	W			1		2			0	0	Clear.	P. Busin.
Vienna	29.26	743.2	29.96	760.9	55.2	12.9	52	W			4		6			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.52	724.4	30.04	763.0	49.8	9.9	75	SW			4		10			0.083	2.1		
Brussels	29.76	755.9	29.96	760.9	53.6	12.0	60	WNW			6	1	9	NW	WNW	0.024	0.60		Royal Observatory.
Furnes	29.95	760.8	29.98	761.4	54.1	12.3	70	WSW			4		10			0.122	3.1	Light rain	
Maeseyck	29.80	757.0	29.93	760.3	48.9	9.4	71	W			6		5			0.374	9.5		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.54	750.3	29.64	752.8	43.7	6.5		W	30	13.4			2			0.360	9.14	Squally	W. Boswell.
Ardrossan	29.80	756.9	29.82	757.4	49	9.4		NW			5		7					D. clouds	William McNeil.
Armagh, Observatory			29.92	760.0	50.1	10.1		SW	11	4.9			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.94	760.5	50.0	10.0		W	31	13.9			8					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.98	761.5	50.8	10.4		SW			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.45	748.0	29.85	758.2	49.1	9.5		NW			6		5			0.25	6.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	86	30.0		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.95	760.7	52.5	11.4		W			1		7					D. clouds	H. Todd. [H. C.
Cardington			29.83	758.4	54.0	12.2		W			2		9					Overcast	John McLaren.
Chatham, School M. E	29.86	758.4	29.99	761.7	56.7	13.7		SW			2		10					Hazy	Lt. W. G. Morris, R. E.
Dartmoor	28.60	726.4	30.08	764.0	51.4	10.8		NW			4		6					D. clouds	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.86	758.4	29.89	759.2	49	9.4		W			4		5					D. clouds	J. Mac Gowan.
Dover	29.96	761.0	29.98	761.5	55	12.8		WNW			3		2					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.90	759.4	51.8	11.0		WNW	11.6	5.2			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.87	758.7	30.10	764.5	58.0	14.4		W			2		6					Overcast	The Staff.
Fort Napier, (Natal)	27.68	703.1	29.90	759.4	70.0	21.1		E			2		1					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.99	761.7	85	29.4		W			1		3					D. clouds	
Galway, Queen's College					56	13.3		NW			8		10					Gloomy	B. G. Clare for Prof. Curtis.
Gibraltar, (Mediterranean)	30.12	765.0	30.16	766.1	68.5	20.3		E			5		2					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.58	751.3	29.79	756.7	43.0	6.1		WSW			6		4					Blue sky	D. G. Maclean.
Great Yarmouth	29.89	759.2	29.90	759.4	51	10.6		WNW			4		5					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.82	757.4	29.99	761.7	55.0	12.8		WNW			3		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.87	758.7	30.09	764.3	57.5	14.2		WNW			2		6					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.09	764.3	57	13.9		W			4		4			0.3	8.	D. clouds	M. P. Moyle.
Holyhead	29.92	760.0	29.97	761.2	52	11.1		WSW			4		3					D. clouds	John Tilston.
Jersey	29.84	757.9	30.14	765.5	57.6	14.2		W			6		7			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory			29.99	761.7	54.6	12.6		WNW	14	6.3			7kd					Threatening	The Staff.
Kingstown	29.94	760.5	29.97	761.2	52	11.1		W			4		9					Overcast	George Mitchell.
Leicester, Museum			29.94	760.5	52.1	11.2		W			2		9					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.00	762.0	30.08	764.0	70.4	21.3		NW			1		8					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.55	750.6	29.64	752.8	44	6.7		NNW			4		2					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.99	761.7	81.5	27.5		NE			4		10		WNW			Overcast	C. S. Duncombe.
Nottingham, Observatory	29.75	755.6	29.94	760.5	51.7	10.9		WNW			5		10c;ks;d			0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.43	747.5	29.95	760.7	52.0	11.1		W			6		6					Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.99	761.7	54	12.2		W			2		8					Overcast	F. Lucas
Plymouth	30.00	762.0	30.08	764.0	58.5	14.7		W			2		8					D. clouds	John Merrifield.
Roche's Point	29.94	760.5	29.98	761.5															W. Kennedy.
Saint Ann's Head	29.87	758.7	30.03	762.7	54	12.2		WNW			2		6					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			29.49	749.0	41.5	5.3		WNW	40	17.9			1					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.89	759.2	63.8	17.7		NNE			1		5		W	Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.64	752.8	29.88	758.9	51.6	10.9		NW			4		6			0.32	8.1	Overcast	W. F. Cooper.
Silloth Rectory	29.82	757.4	29.85	758.2	49.7	9.8	75	NE			6		3			0.495	12.58	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					48.9	9.4		W			5		10					Squally	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.61	752.1	42	5.6		NW			5		10					Squally	John Smith.
Stratfield Turgiss	29.78	756.4	30.00	762.0	55.4	13.0		W			1		5					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.53	750.0	40	4.4		NW			5		7					Showery	John Trotter.
Truro, Royal Institution			30.09	764.3	60	15.6		W			4		8					Gloomy	W. Newcombe.
Valencia, Observatory			29.94	760.5	53.0	11.7		SSE	20	8.9			10					Raining	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					54	12.2		W			4		5			0.20	5.1		Henry Mercer.
Cape Good Hope, Obs'y	29.98	761.5	30.02	762.5	73.2	22.9	60	SE	7	3.1		6	6						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.04	763.0	55.0	12.8	49	NE			3		0			0	0		Francis Abbott, F.R.A.S
Leith, Restalrig Park			29.78	756.4	46.1	7.8		W			4		2k			0	0	Fine	Andrew Gibb.
Mauritius, Observatory	29.96	761.0	30.15	765.8	75.1	23.9	66	E	20.5	9.2		1	4		E	0.83	21.1	Fine	C. Meldrum.
Melbourne, Observatory	29.97	761.2	30.06	763.5	57.8	14.3	75	NE	4	1.8			0			0	0	Sultry	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.33	752.6	47	8.3		NW			6		10			0.4	10.		J. Youngclause.
North Unst, (Shetland Is.)			29.20	741.7	40	4.4		NW			8		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity.	Wind. Velocity.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 40° 52′, W. 61° 38′			29.81	757.2	70	21.1		SW			4		5			10*	NE;8	D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 39° 50′, W. 69° 45′			29.91	759.7	59	15.0		WNW			5		7			4	WNW	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 6′			29.69	754.1	49	9.4		NNE			6		10			6	N	Overcast	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 47° 55′, W. 31° 50′			29.51	749.5	61	16.1		SSW			6		10			5	SSW	Raining	Capt. Alex. Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.19	665.2			69.4	20.8	86	E			3	4cs				0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.36	745.8	29.41	747.0	45.5	7.5	68	W			4		8						
Fanöe	29.48	748.7	29.50	749.2	43 0	6.1	79	W			6		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.78	756.3	29.82	757.4	28.9	— 1.7	98	NE			7		8						
Thorshavn, (Faröe)	29.38	746.3	29.42	747.2	36.1	2.3	77	NW			6		5					Snowing	
Vestervig	29.20	741.6	29.37	745.9	44.2	6.8	94	WNW			7		6					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.65	753.0	30.20	767.0	55.4	13	73	SW			1		5		S	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.93	760.1	30.04	762.9	58 6	14.8	76	W			2		5		SW	0.063	1.6	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.05	763.2	30.13	765.2	65.1	18.4	39	N			2		2		NW	0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.57	751.0	30.13	765.4	56.1	13.4	56	W			3		8kn		NW	Inap.	Inap.	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.02	762.5	30.18	766.6	58.8	14.9	55	WSW	10.3	4.6					WSW	0	0		Albert Cheux.
Beauvais	29.81	757.2	30.10	764.5	53.1	11.7	83	N			2		8		NW	0	0	Very cloudy	Normal School.
Besançon	29.30	744.2	30.20	767.0	54.0	12.2	57	W			3		2		W	0.055	1.4	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.36	745.8	30.23	769.1	54.1	12.3	61	N			2		5ck		W	0.16	4	Cloudy	Normal School.
Bourges, Normal School	29.60	751.8	30.15	765.8	56.5	13.6	73	ENE			4		5		NE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.89	759.2	30.11	764.8	61.7	16.5	73	W			4		6n		W	0.010	0.25		The Staff.
Carcassonne, Normal School	29.81	757.1	30.22	767.6	61.7	16.5	61	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.03	762.7	30.10	764.6	60 4	15.8	69	E			1		5		E	0.063	1.6	Cloudy	Normal School.
Chartres, Normal School	29.56	750.8	30.12	765.0	62.2	16.8	80	NW			4		10		SE	0.002	0.05	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.76	756.0	30.08	764.0	59.5	15.3	68	W			4		8k		W	0.217	5 5	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.85	732.7	30.20	767.0	58.3	14.6	42	W			2		8			0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.22	742.2	30.10	764.5	52.5	11.4	69	W			6		5kn		E	0.138	3.5	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.00	736.5	30.14	765.5	62.1	16.7	66	NW			6		8		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.00	762.0	30.33	770.4	59.7	15.4	55	SW			4		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.88	758.9	30.19	766.8	56.5	13.6	64	W			2		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.29	743.9	30.21	767 3	53.8	12.1	72	W			1		5		S	0.322	8.2	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.11	764.7	30.21	767.2	62.2	16.8	53	W			4		5		NW	0	0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.50	749.3	30.15	765.9	54.9	12.7	77	NNW			2		0			0.12	3	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.10	739.2	30.12	765.0	51.4	10.8	72	NE			4		2		S	0.16	4	Slightly cov.	Normal School
Nismes, Normal School	29.90	759.5	30.10	764.6	63.0	17.2	54	N			2		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.76	755.8	30.14	765.5	57.6	14.2	58	SW			4		5		W	0	0	Cloudy	Bernard, Director.
Paris, Observatory	29.87	758.6	30.11	764.7	58.5	14.7	53	WNW			2		7kn		WNW	0	0	Very cloudy	National Observatory.
Privas	29.07	738.4	30.15	765.7	55.4	13	56	NE			2		5		NE	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.21	767.4	30.24	768.2	62.6	17.0	64	SW			3		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.01	762.3	30.10	764.5	54.3	12.4	83	W			2		5		W	0.150	3.8	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.18	741.2	30.24	768.1	68.9	20.5	53	N			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.54	750.4	30.26	768.7	56.5	13.6	72	NW			1		8		SE	0.008	2.	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.4	28										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			30.07	763.7	61.5	16.4	49	NW			4		7			0	0	Cloudy	The Staff.
Mont-Louis	25.00	635.0	30.32	770 0	48.6	9.2	42	ESE	7.4	3.33			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.82	757.5	30.10	764.5	60.4	15.8	55	W			2–3		9		W	0	0		Marié Davy, Director.
Perpignan			30.18	766.6	63.7	17.6	44	N	18.6	8.33			4		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.41	543.9			33.8	1.0		NNW			8		3					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.67	575.7			41.2	6.8		NNW			3		3			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.95	760.6	30.14	764.8	59.7	15.4	53	W			2		9		WNW	0	0	Cloudy	E. Renou.
Toulouse, Observatory	29.56	750.8	30.29	769.3	57.0	13.9	66	NNW			1		9			0	0		The Staff.
Tours	29.95	760.7	30.15	765.7	57.9	14.4		W			2		7		W	0.012	0.3		C. Marquet.
Versailles, (near Paris)			30.11	764.8	57.9	14.4	57	WNW			2		9			0.002	0.06	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.28	769.2	30.31	769.8	48.4	9.1	81	WSW	2.0	0.9		c	k			0	0	Fair	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.: local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.56	750.8	29.73	755.1	47.1	8.4	78	S			1		10			0.149	3.79		Prof. Arndt.
Breslau	29.30	744.1	29.82	757.5	51.8	11.0	53	WSW			3		4			0.064	1.62		Royal University Obs'y.
Carlsruhe	29.59	751.5	30.02	762.4	54.7	12.6	64	SW.			6		9			0.244	6.2	Raining	Albert Senz.
Cassel	29.33	745.0	29.94	760.4	48.2	9.0	67	WNW			7		8	WNW		0.296	7.52		Dr. H. Möhl.
Crefeld	29.72	754.8	29.88	758.9	53.2	11.8	59	NW			6		8kn			0.16	4.	Raining	Director Lose.
Emden	29.76	755.9	29.80	756.8	49.1	9.5	58	WNW			6		10			0.276	7.0		Prof. Prestel.
Frankfort on the Main	29.62	752.3	29.98	761.6	52.2	11.2	56	SSW			2		9			0.043	1.1		Physical Society.
Friedrichshafen	28.68	728.5	30.13	765.4	50.5	10.3	72	SW			7		5	WSW		0	0		M. Wilhelm.
Hamburg	29.58	751.2	29.65	753.0	44.2	6.8	80	W			6		10n			0.295	7.5	Rain & hail.	Captain F. Hegemann
Kiel	29.60	751.8	29.61	752.2	40.8	4.9	86	NW			3		10			0.431	10.96		Prof. G. Karsten.
Königsberg, (Prussia)	29.49	749.0	29.56	750.8	47.8	8.8	67	SW										Cloudy	Prof. E. Luther.
Köslin			29.50	749.3	45.5	7.5		W			6		4			0.197	5.0		H. Müller.
Leipsic, Observatory	29.39	746.5	29.81	757.2	53.2	11.8	58	SW			6		8	WSW		0.091	2.3		Prof. Bruhns.
Memel, Naval School	29.45	748.0	29.50	749.2	49.3	9.6	66	SW			6		5s						Reinbrecht von Skalweit
Neufahrwasser	29.54	750.2	29.55	750.6	50.2	10.1	63	SW			6		7			0.063	1.6		A. Lothes.
Posen	29.47	748.5	29.76	755.9	50.9	10.5	66	SW			3–4		10					Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.54	750.3	30.10	764.4	54.0	12.2	56	SW			3		10	W		0.061	1.56		Dr. Schur.
Stuttgart	29.09	738.9	30.04	762.9	52.9	11.6	59	W			6		8	W		0.201	5.1	Raining	Prof. Schoder.
Treves, (Trier)	29.32	746.3	29.90	759.5	54.5	12.5	66	W			5		10			0.024	0.61		Prof. Flesch.
Weissenburg, (Bavaria)	28.48	723.5	30.00	762.1	49.5	9.7	57	W			3		9		W	0.008	0.2		Dr. Von Bebber.
Wustrow, Naval School	29.55	750.6	29.59	751.6	45.5	7.5	77	W			7		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.58	751.2	29.96	760.9	70.3	21.3		SW										Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; occasionally the kind of clouds and wind-force as published; the weather as published. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.86	758.5	29.92	759.8	84.2	29.0	65	SW	21.0?	9.4?			0			0	0	Blue sky	
Deesa	29.46	748.2	29.93	760.2	89.1	31.7	52	Calm					8	NW	NNE	0	0	D. clouds	
Bombay	29.82	757.4	29.86	758.4	84.0	28.9	87	WNW	5.0	2.2			4	WSW		0	0	D. clouds	
Poona	27.81	706.4	29.80	757.0	80.1	26.7	71	ESE					10	SE	E	0	0	Lightning	
Lahore	29.18	741.2	29.93	760.1	79.9	26.6	49	Calm	4.1	1.8			0			0.05	1.3		
Belgaum	27.34	694.6	29.88	759.1	76.2	24.6	81	Calm					10	S	E	0.10	2.5	Raining	
Bangalore																			
Roorkee	28.98	736.1	29.88	758.9	80.8	27.1	53	Calm	2.0	0.9			2			0	0		
Agra	29.31	744.5	29.88	758.8	83.8	28.8	62	W								0	0		
Trichinopoly																			
Nagpur	28.84	732.4	29.88	758.9	81.6	27.6	66	Calm	2.8	1.2			3			0	0	D. clouds	
Madras																			
Lucknow	29.51	749.6	29.88	759.0	82.3	27.9	71	Calm	0.3	0.1			1			0	0	D. clouds	
Allahabad	29.55	750.6	29.86	758.5	81.7	27.6	82	Calm	0.7	0.3			0			0	0	Blue sky	
Patna	29.68	753.9	29.86	758.5	86.4	30.2	58	E	1.1	0.5			6	N	N	0	0	D. clouds	
Hazaribagh	27.88	708.2	29.91	759.6	75.6	24.2	72	NW	2.8	1.2			0			0	0	Blue sky	
Cuttack	29.81	757.2	29.90	759.3	79.5	26.4	82	SSE	0.8	0.4			6			1.24	31.5	D. clouds	
Calcutta (Alipore)	29.90	759.4	29.92	760.0	77.2	25.1	97	NNW	2.0	0.9			10			0	0	Lightning	
Goalpara	29.48	748.8	29.87	758.7	77.3	25.2	73	W	1.3	0.6			5			0.14	3.6	D. clouds	
Chittagong	29.85	758.3	29.94	760.6	81.6	27.6	85	SW	3.7	1.6			6			0	0	Blue sky	
Sibsagar	29.59	751.6	29.93	760.3	73.5	23.1	93	SSW	2.4	1.1			10			0.49	12.4	Gloomy	
Rangoon																			
Jubbulpore	28.53	724.6	29.90	759.3	79.9	26.6	75	NW	1.1	0.5						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Valdobbia	22.16	562.9	30.10	764.4	35.1	1.7	50	NE			6		6	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.13	562.2	30.11	764.9	31.1	— 0.5		NNE			2		6	WSW		0	0		Signora Ernesta Manfredi.
Udine	29.60	751.8	30.02	762.4	56.3	13.5	39	SW	1.3	0.6			3			0	0		Prof. Giovanni Clodig.
Padua	29.90	759.4	30.01	762.2	55.0	12.8	48	SSW	1.8	0.8			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.82	757.3	30.01	762.3	56.8	13.8	46	E	0.7	0.3			0			0	0		Conte Alm. Da Schio.
Verona	29.76	756.0	29.99	761.7	61.5	16.4	67	SE			1		0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	28.93	734.7	29.97	761.2	57.4	14.1	56	NE			1		0			0	0		Prof. Giuseppe Calza
Milan	29.50	749.3	30.03	762.8	57.9	14.4	59	NNW			4		4	WNW		0	0		Ab. Gio. Capelli.
Pavia	29.66	753.3	30.01	762.2	56.7	13.7	52	NE			1		2			0	0		Prof. Gio. Cantoni.
Moncalieri	29.10	739.0	30.02	762.5	56.1	13.4	69	SSW	0.7	0.3			2			0	0		Prof. P. F. Denza.
Mondovi	28.07	713.0	30.01	762.2	57.0	13.9	51	NW			2		2	NNW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.81	757.1	30.03	762.7	64.8	18.2	52	SE			2		7	NW		0	0		Prof. L. Vassallo.
Genoa	29.85	758.3	30.02	762.6	64.0	17.2	54	SE	4.3	1.9			8	SW		0	0		Prof. G. M. Garibaldi
Piacenza	29.75	755.7	30.01	762.3	59.2	15.1	39	SE	1.8	0.8			4			0	0		Dott. G. Manzi.
Parma	29.69	754.1	30.01	762.2	61.3	16.3	38	SE			2		1			0	0		Prof. P. Pigorini.
Florence	29.80	756.9	30.06	763.5	60.8	16.0	53	SW			2		5	W		0	0		Cav. F. Meucci.
Leghorn	29.90	759.5	29.98	761.6	60.1	15.6	32	SSW	2.5	1.1			10			0	0		Prof. P. Monte.
Siena	28.82	732.0	30.04	763.0	58.6	14.8	55	NW	0	0			9	W		0	0		Prof. L. Toscani.
Urbino	28.47	723.1	30.05	763.2	53.1	11.7	53	SW			2		0			0	0		Prof. P. Serpieri.
Pesaro	29.98	761.5	30.03	762.8	57.0	13.9	64	W	19.2	8.6			7			0	0		Prof. Luigi Guidi.
Ancona	29.94	760.5	30.05	763.3	58.5	14.7	51	SE			4		1			0	0		Prof. F. DeBosis.
Grosseto	29.96	761.0	30.08	763.9	61.5	16.4	59	WSW			4		8	S		0	0		Avv. P. Ponticelli.
Rome	29.88	758.9	30.06	763.4	61.7	16.5	43	W	0.7	0.3			0			0	0		Prof's. P. Secchi & L. Respighi.
Naples, O. U.	29.86	758.5	30.07	763.6	65.5	18.6	40	W			2		1	WNW		0	0		Prof. L. Palmieri.
Lecce					62.2	16.8	53	NNW	12.5	5.6			6			0	0		Prof. C. De Giorgi.
Cosenza	29.19	741.5	30.09	764.2	66.2	19.0	68	NE	3.8	1.7			10			0.071	1.8		Prof. F. D. Conti.
Cagliari	29.85	758.3	30.04	763.1	67.5	19.7	45	NW			6		5	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.98	761.4	30.02	762.6	69.8	21.0	57	E			2		4	S		0	0		Prof. F. Cafiero.
Palermo	29.78	756.4	30.03	762.8	65.1	18.4	57	W	8.7	3.9			9			0.123	3.1		Prof. G. Cacciatore.
Caltanissetta	28.10	713.7	30.04	763.0	60.4	15.8	59	WNW			4		4			0	0		Prof. A. Pagani.
Syracuse	29.98	761.6	30.06	763.5	68.7	20.4	48	NW			4		5	W		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.54	750.3	30.10	764.4	61.3	16.3	59	SW	6.3	2.8			2			0	0		Prof. F. Brioschi

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.5 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.78	756.4	29.87	758.8	59.9	15.5	73	Calm	0	0						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.17	588.5	30.23	767.9	49.8	9.9	70	Calm	0	0		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,593 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.96	761.0	29.96	761.0	53.6	12.0		W			5					0.177	4.5		
Groningen	29.69	754.2	29.75	755.6	48.2	9.0		NW			5					0.244	6.2		
Helder	29.81	757.1	29.81	757.1	51.4	10.8		W			5					0.087	2.2		
Hellevoetsluis			29.91	759.7	52.5	11.4	69	W			6								
Utrecht	29.84	757.9	29.89	759.1	53.4	11.9	76	WNW			5		5			0.055	1.4	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.10	739.0	29.15	740.4	43.5	6.4	59	WSW	19.2	8.6			3			0.433	11.0	Graupelnd.	
Brönö	28.87	733.3	28.91	734.3	46.4	8 0	59	S	9	4			0			0	0		
Christiania	28.98	736.2	29.13	739.9	45.9	7.7	48	SSW	7	3			9			0	0		
Tromsö	28.94	735.0	28.98	736.1	41.4	5.2	90	Calm	0	0			10			0.079	2.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.85	758.1	30.04	762.9	69.6	20.9	83	SSE	7.4	3.3			2			0.079	2.0		Dr. J. A. Sampaio
Campo Major	29.17	740.9	30.17	766.4	72.5	22.5	29	SE	5.6	2.5			2			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.6	30.06	763.4	74.5	23.6	55	SE	4.9	2.2			1			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	756.9	30.15	765.9	68.5	20.3	48	NNE	3.8	1.7			0			0	0		The Staff.
Ponta Delgada, (Azores)	29.98	761.4	30.05	763.2	69.4	20.5	78	SE	3.1	1.4			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.32	744.7	29.74	755.4	50.0	10.0	66	WSW	18	8			1						Astronomical Obs.
Wilna	29.21	741.8	29.62	752.4	47.1	8.4	82	SSW	2	1			5						Astronomical Obs.
Dorpat	29.21	742.0	29.46	748.2	41.4	5.2	86	SSW	7	3			9						Prof. Dr. Weihrauch
St. Petersburg	29.47	748.6	29.49	749.0	37.2	2.9	87	SSE	16	7			10						Central Physical Obs.
Kuopio	29.01	736.8	29.33	745.0	38.5	3.6	100	S	34	15			10					Raining	Ch. Forsten.
Kieff	29.01	736.9	29.65	753.2	41.2	5.1	80	NW	16	7			10						Physical Cabinet.
Nikolaiev	29.60	751.7	29.67	753.5	47.1	8.4	92	NW	22	10			10						Kurdakof.
Kertch	30.07	763.6	30.08	764.1	64.0	17.8	93	SE	4	2			10						Lagorio.
Moscow	29.11	739.5	29.67	753.7	37.6	3.1	95	SSE	7	3			10					Light rain	Meteorological Obs.
Lugan	29.39	746.4	29.59	751.5	63.0	17.2	90	SE	18	8			10			Blank	Blank		Meteorological Obs.
Archangel	29.72	755.0	29.74	755.5	42.6	5.9	75	S	22	10			10						Ogorodnikof.
Tiflis	28.60	726.5	29.96	761.0	76.8	24.9	50	SE	4	2			4						Physical Observatory.
Astrakhan	30.17	766.3	30.09	764.2	54.1	12.3	73	ESE	11	5			6						Sebastianof.
Kasan	29.88	759.0	30.16	766.1	39.7	4.3	54	SSE	4	2			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.29	743.9	30.27	768.8	34.7	1.5	66	W	2	1			4						Meteorological Obs.
Nukuss	29.84	757.9	30.07	763.8	60.4	15.8	77	N	7	3			1						
Kasaly																			Bobrof.
Tashkend	28.53	724.6	30.23	767.9	58.6	14.8	91	NW	7	3			10					Rain and fog	Michelson.
Barnaul	29.44	747.7	29.96	761.0	46.6	8.1	51	Calm	0	0			9						Meteorological Obs.
Yeniseisk	29.71	754.5	29.85	758.2	40.8	4.9	84	ENE	2	1			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.08	764.0	30.22	767.6	52.5	11.4	36	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					40.1	4.5	76	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.98	710.8	30.18	766.5	68.0	20.0	41	SW	3.7	1.67		3	0	NNW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.8	29.99	761.8	81.7	27.6	77	NNE	10.3	4.6		7c	5n			Inap.	Inap.	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.05	763.3	30.15	765.8	75.0	23.9	49	ENE	17.6	7.86		0	1		E	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.88	759.0	82.4	28.0	88	SE	0	0		6s	1k			0.049	1.25	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.19	741.8	29.22	742.3	41.0	5.0	.....	SE	.....	.....	6	.....	10	.....	.....	0.079	2.0	.....	
Umea	29.03	737.3	29.08	738.6	37.8	3.2	80	Calm	.....	.....	0	.....	10	.....	.....	0.228	5.8	Raining	
Hernosand	28.97	735.8	29.02	737.1	44.6	7.0	82	SSW	.....	.....	2	.....	5	.....	.....	0.244	6.3	Raining	
Stockholm	29.01	736.9	29.19	741.4	45.3	7.4	83	WSW	.....	.....	4	.....	7	.....	.....	0.232	5.9	.....	
Wisby	29.26	743.1	29.32	744.6	44.6	7.0	66	WSW	.....	.....	6	.....	5	.....	.....	0.232	5.9	.....	
Sub-Series.																			
Upsala	29.10	739.1	29.17	741.0	44.2	6.8	72	SW	13.0	5.8	.....	.....	3	S	.....	0.011	0.29	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Direction. Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Geneva	26.75	730.2	30.17	766.4	54.9	12.7	60	S	.....	.....	1	.....	8	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.50	723.8	30.15	765.9	47.8	8.8	85	W	.....	.....	2	.....	10	.....	.....	0	0	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +4.0 mm; Thermometer, —0.8 cent.; Relative Humidity, —11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Direction. Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.95	760.6	60.6	15.9	75	N	9	4.0	.....	.....	9	.....	N	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.97	761.3	64.2	17.9	.....	NE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.05	763.2	61.0	16.1	.....	W	.....	.....	2	.....	10	.....	.....	1.93	49.	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.75	755.6	29.86	758.5	95.7	35.4	302	SW	.....	.....	2	.....	10cs	.....	.....	0	0	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Direction. Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.	29.93	760.2	30.00	762.0	48.3	9.1	96	NE	20	8.9	.....	.....	10	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.97	761.2	47	8.3	.....	NW	1	0.4	.....	.....	10s	.....	NW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.94	760.5	48	8.9	98	NE	9	4.0	.....	.....	10n	.....	NE	0.96	24.4	Heavy rain	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.95	760.7	48	8.9	92	E	25	11.2	.....	.....	10n	.....	.....	1.09	27.7	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.90	759.4	43.5	6.4	95	NE	.....	.....	3	.....	10s	.....	.....	0.108	2.74	Unsettled	James Smith, M. A.
Dalhousie, N. B.	29.98	761.5	30.01	762.2	45.2	7.3	100	E	.....	.....	5	.....	.....	.....	.....	0.79	20.1	Raining	H. A. Johnson.
Esquimault, B. C.	29.95	760.7	30.00	762.0	44.3	6.8	96	Calm	.....	.....	.....	3ck	0	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.02	762.5	38	3.3	100	NE	50	22.4	.....	.....	10n	.....	.....	0.16	4.1	Light rain	J. McWilliams.
Fredericton, N. B.	29.79	756.7	29.85	758.2	49.0	9.4	93	NE	5	2.2	.....	.....	10n	.....	E	0.050	1.27	Raining	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.78	756.4	46	7.8	100	S	2	0.9	.....	5k	5n	S	S	0.021	0.53	Light rain	James Stewart.
Goderich, Ontario	29.39	746.5	30.20	767.1	44.1	6.7	86	Calm	.....	.....	0	4k	5n	N	.....	0	0	Clearing	H. J. Strang, M. A.
Granton, Ontario	29.94	737.6	30.17	766.3	41	5.0	91	NW	.....	.....	1	1cs	0	SE	.....	0.05	1.3	Clear	James Grant.
*Halifax, N. S.	29.66	753.4	29.80	756.9	52	11.1	99	NE	11	4.9	.....	.....	10n	.....	.....	1.900	48.26	Heavy rain	F. Allison, M. A.
Hamilton, Ontario	29.79	756.7	30.17	766.3	42.9	6.1	80	W	.....	.....	3	0	0	.....	.....	0.20	5.1	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.29	769.4	30.31	769.9	40	4.4	77	NE	.....	.....	4	3k	3ks	NE	.....	0	0	Foggy	E. Weedon.
*Kingston, Ontario	29.65	753.1	30.02	762.5	48	8.9	83	NW	4	1.8	.....	.....	10ks	.....	NE	0.01	0.3	Cloudy	S. Woods, M. A.
*Montreal, Quebec	29.65	753.1	29.85	758.2	49	9.4	95	N	6	2.7	.....	.....	10n	.....	N	0.24	6.1	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.44	747.8	30.16	766.1	38	3.3	91	NW	11	4.9	.....	2c	5s	N	N	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.31	744.5	30.08	764.0	42.9	6.1	87	NW	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.47	748.5	30.18	766.6	39	3.9	91	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S.	29.98	761.5	30.03	762.7	42.6	5.9	.....	E	20	8.9	.....	.....	.....	.....	.....	0.303	7.70	Raining	Peter Grant.
Port Stanley, Ontario	29.53	750.0	30.19	766.8	41	5.0	91	W	3	1.3	.....	.....	10n	.....	NW	0.26	6.6	Light rain	M. Payne.
*Quebec, Quebec	29.54	750.3	29.86	758.4	45	7.2	92	NE	26	11.6	.....	.....	10n	.....	NE	0.45	11.4	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.60	751.8	30.07	763.8	44	6.7	87	NW	10	4.5	.....	.....	2s	.....	NW	0.05	1.3	Fair	W. H. McIntyre.
St. John, N. B.	29.65	753.1	29.82	757.4	51	10.6	93	N	2	0.9	.....	.....	10s	.....	.....	0.04	1.0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.44	747.8	30.16	766.1	42	5.6	91	NE	3	1.3	.....	.....	10ks	.....	.....	0.10	2.5	Light rain	K. Stewart.
Stayner, Ontario	.....	.....	30.09	764.3	42	5.6	96	N	15	6.7	.....	.....	10n	.....	N	0.17	4.3	Threatening	R. J. Cole.
Stratford, Ontario	28.85	732.8	30.16	766.1	40.0	4.4	94	NW	6	2.7	.....	1cs	4s	NW	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	30.12	765.0	30.15	765.8	47	8.3	86	E	14	6.3	.....	.....	10n	.....	SE	0.01	0.3	Light rain	T. C. Hill.
*Toronto, Ontario	29.76	755.9	30.15	765.8	44	6.7	89	NW	11	4.9	.....	.....	10ks	.....	NW	0.05	1.3	Cloudy	Magnetic Observatory.
Windsor, N. S.	29.70	754.4	29.80	756.9	50.8	10.4	97	E	20	8.9	.....	.....	10n	.....	.....	1.16	29.5	Heavy rain.	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	42.0	5.6	83	NE	.....	.....	.....	.....	10	.....	.....	0	0	Fair	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.67	753.6	29.90	759.4	50	10.0	71	NW	14	6.3			10ks		NW	0	0	Cloudy	
Alpena, Michigan	29.54	750.3	30.21	767.3	38	3.3	81	NW	4	1.8			10s		NW	0.06	1.5	Cloudy	
Atlantic City, New Jersey	30.02	762.5	30.04	763.0	49	9.4	77	W	11	4.9		0	0			0	0	Clear	
Augusta, Georgia	30.04	763.0	30.22	767.6	51	10.6	79	NW	4	1.8		0	0			0	0	Clear	
Baltimore, Maryland	30.06	763.5	30.11	764.8	51	10.6	65	NW	12	5.4		0	2s		NW	0	0	Clear	
Barnegat, New Jersey	29.99	761.7	30.01	762.2	51	10.6	72	W	14	6.3		0	0			0	0	Clear	
Bismarck, Dakota	27.92	709.2	29.54	750.3	48	8.9	70	NW	15	6.7			10s		NW	0	0	Cloudy	
Boise City, Idaho	27.11	688.6	29.77	756.1	34	1.1	90	Calm	0	0		0	0			0.03	0.8	Clear	
Boston, Massachusetts	29.66	753.4	29.81	757.2	48	8.9	77	W	9	4.0			10n		W	0.72	18.3	Light rain	
Brackettville, Texas	28.86	733.0	29.86	758.4	70	21.1	71	Calm	0	0			10ks		S	0	0	Cloudy	
Breckenridge, Minnesota	28.72	729.5	29.70	754.4	48	8.9	70	SE	23	10.3		0	8ks		SE	0	0	Cloudy	
Brownsville, Texas	29.97	761.2	30.04	763.0	74	23.3	63	E	2	0.9		0	0			0	0	Clear	
Buffalo, New York	29.38	746.2	30.10	764.5	45	7.2	92	W	8	3.6			10s		NW	1.73	43.9	Cloudy	
Burlington, Vermont	29.60	751.8	29.85	758.2	50	10.0	100	NW	4	1.8			10n		Calm	1.22	31.0	Light rain	
Cairo, Illinois	29.80	756.9	30.20	767.1	51	10.6	72	SE	8	3.6		8k	0	N		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona																			
Campo, California	27.32	693.9	29.89	759.2	51	10.6	93	SW	12	5.4			10s		SW	0.01	0.3	Threatening	
Cape Hatteras, N. Carolina	30.08	764.0	30.08	764.0	58	14.4	53	N	12	5.4		0	0			0	0	Clear	
Cape Henry, Virginia	30.13	765.3	30.15	765.8	58	14.4	58	NW	25	11.2		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	57	13.9	74	N	6	2.7		0	0			0	0	Clear	
Cape May, New Jersey	30.04	763.0	30.07	763.8	52	11.1	53	W	32	14.3		0	0			0	0	Clear	
Charleston, South Carolina	30.14	765.5	30.21	767.3	58	14.4	68	N	10	4.5		0	0			0	0	Clear	
Cheyenne, Wyoming	23.89	606.8	29.83	757.7	42	5.6	75	NE	4	1.8		8c	2s	W	Calm	0.01	0.3	Cloudy	
Chicago, Illinois	29.47	748.5	30.17	766.3	44	6.7	84	SE	3	1.3		0	Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.54	750.3	30.20	767.1	43	6.1	66	E	2	0.9			Fog		E	0	0	Foggy	
Cleveland, Ohio	29.51	749.5	30.25	768.3	46	7.8	69	W	7	3.1			10ks		W	0.19	4.8	Cloudy	
Concho, Texas					65	18.3	73	SE	16	7.2		0				0	0	Clear	
Corsicana, Texas	29.58	751.3	30.04	763.0	64	17.8	89	S	7	3.1			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.38	746.2	30.02	762.5	48	8.9	70	SE	15	6.7			10s		SE	0	0	Cloudy	
Denison, Texas	29.23	742.4	30.02	762.5	63	17.2	88	SE	12	5.4		1k	0	E		0	0	Clear	
Denver, Colorado	24.63	625.6	29.85	758.2	45	7.2	54	S	7	3.1		0	5s		W	0	0	Fair	
Detroit, Michigan	29.53	750.0	30.22	767.6	42	5.6	74	NW	5	2.2			10s		Calm	0.01	0.3	Cloudy	
Dodge City, Kansas	27.13	689.1	29.32	744.7	58	14.4	64	W	6	2.7		0	2s		W	0	0	Clear	
Dubuque, Iowa	29.39	746.5	30.10	764.5	44	6.7	84	SE	13	5.8			10n		Calm	0.13	3.3	Heavy rain	
Duluth, Minnesota	29.30	744.2	29.98	761.5	44	6.7	84	Calm	0	0			10n		Calm	Inap.	Inap.	Light rain	
Eagle Pass, Texas	29.22	742.2	29.94	760.5	65	18.3	89	SE	3	1.3		1cs	1s	Calm	Calm	0	0	Fair	
Eastport, Maine	29.70	754.4	29.77	756.1	51	10.6	93	E	2	0.9			Fog		E	0.21	5.3	Foggy	
Erie, Pennsylvania	29.13	747.5	30.15	765.8	47	8.3	85	NW	10	4.5			10s		NW	0.42	10.7	Cloudy	
Escanaba, Michigan	29.52	749.8	30.20	767.1	40	4.4	82	N	4	1.8		5k	2s	N	N	0	0	Cloudy	
Florence, Arizona	28.26	717.8	29.86	758.4	75	23.9	40	S				5cs	0	S		Inap.	Inap.	Fair	
Fort Bayard, New Mexico	24.01	609.8	30.01	762.2	53	11.7	36	SW	2	0.9		0	0			0	0	Clear	
Fort Craig, New Mexico	25.44	646.2			57	13.9	58	NW	1	0.4		0	2s		NW	0	0	Fair	
Fort Gibson, Indian Ter.	29.41	747.0	29.94	760.5	62	16.7	83	SE	13	5.8		5c	0	W		0	0	Fair	
Fort Griffin, Texas	28.68	728.5	29.92	760.0	65	18.3	73	SE	6	2.7		5c	0	W		0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.69	728.7	29.76	755.9	66	18.9	68	S	16	2.7		2cs	8s	Calm	W	0	0	Cloudy	
Fort Sully, Dakota	28.07	713.0	29.71	754.6	47	8.3	85	NW	8	3.6		10c	0	Calm		0	0	Cloudy	
Galveston, Texas	30.03	762.7	30.08	764.0	74	23.3	81	SE	8	3.6		2k	0	SE		0	0	Fair	
Grand Haven, Michigan	29.55	750.6	30.23	767.8	34	1.1	95	E	2	0.9		1c	Fog	W	Calm	0	0	Clear	
Indianapolis, Indiana	29.43	747.5	30.23	767.8	41	5.0	83	Calm	0	0		0	Fog			0	0	Clear	
Indianola, Texas	30.04	763.0	30.07	763.8	71	21.7	85	SE	8	3.6		2k	0	S		0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.12	765.0	30.15	765.8	61	16.1	77	NE	3	1.3		0	0			0	0	Clear	
Keokuk, Iowa	29.38	746.2	30.00	762.0	52	11.1	86	S	8	3.6			10n		S	0.03	0.8	Light rain	
Key West, Florida	29.96	761.0	30.00	762.0	79.0	26.1	80	NE	16	7.2		2k	1ks	NE	NE	Inap.	Inap.	Fair	
Kittyhawk, North Carolina	30.14	765.5	30.16	766.1	54	12.2	68	NW	16	7.2		1k	0	Calm		0	0	Clear	
Knoxville, Tennessee	29.26	743.2	30.31	769.9	38	3.3	90	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.30	744.2	30.04	763.0	45	7.2	100	S	5	2.2			10n		S	0.02	0.5	Heavy rain	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	53	11.7	53	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					67	19.4	90	SE	4	1.8		0				0	0	Clear	
Leavenworth, Kansas	28.96	735.6	29.78	756.4	59	15.0	87	SE	19	8.5		5ks	5n	SE	SE	0.12	3.0	Light rain	
Los Angeles, California	29.63	752.6	29.96	761.0	60	15.6	76	Calm	0	0		0	0			0	0	Clear	
Louisville, Kentucky	29.65	753.1	30.23	767.8	43	6.1	83	E	1	0.4			Fog		Calm	0	0	Dense fog	
Lynchburg, Virginia	29.51	749.5	30.20	767.1	53	11.7	53	NW	2	0.9		0	0			0	0	Clear	
Maricopa Wells, Arizona					70	21.1	32	W				5k	Fog	Calm	Calm	0	0	Fair	
Marquette, Michigan	29.43	747.5	30.15	765.8	37	2.8	80	SE	4	1.8		0	0			0	0	Clear	
Mason, Texas	28.38	720.8	30.10	764.5	65	18.3	74	SE	4	1.8		2cs	2s	Calm	S	0	0	Fair	
Memphis, Tennessee	29.86	758.4	30.19	766.8	55	12.8	68	SE	4	1.8		0	Sm'e		Calm	0	0	Clear	
Milwaukee, Wisconsin	29.51	749.5	30.21	767.3	41	5.0	91	S	2	0.9		0	Sm'e			0	0	Clear	
Mobile, Alabama	30.16	766.1	30.21	767.3	55	12.8	80	N	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	30.01	762.2	30.25	768.3	52	11.1	72	NE	4	1.8		0	Sm'e		Calm	0	0	Clear	
Morgantown, West Virginia	29.15	740.4	30.22	767.6	48	8.9	77	W	3	1.3			10s		W	0.02	0.5	Cloudy	
Mt. Washington, N. H.	23.54	597.9	29.90	759.4	32	0.0	89	N	6	2.7		10s	10s	Calm	NW	0.82	20.8	Cloudy	
Nashville, Tennessee	29.71	754.6	30.26	768.6	43	6.1	91	Calm	0	0			Fog		Calm	0	0	Foggy	
New Haven, Connecticut	29.79	756.7	29.90	759.4	52	11.1	72	NW	5	2.2		0	0			0	0	Clear	
New London, Connecticut	29.84	757.9	29.89	759.2	51	10.6	78	NW	6	2.7		2cs	0	N		0.57	14.5	Fair	
New Orleans, Louisiana	30.10	764.5	30.16	766.1	64	17.8	67	NE	10	4.5		0	0			0	0	Clear	
Newport, Rhode Island	29.81	757.2	29.86	758.4	51	10.6	79	W	20	8.9		0	5ks		W	0.57	14.5	Fair	
New York, New York	29.80	756.9	29.98	761.5	49	9.4	77	W	3	1.3		2cs	0	Calm		0	0	Clear	
Norfolk, Virginia	30.11	764.8	30.17	766.3	52	11.1	66	N	6	2.7		0	Sm'e		Calm	0	0	Clear	
North Platte, Nebraska	26.82	681.2	29.37	746.0	40	4.4	91	NW	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.92	760.0	29.96	761.0	47	8.3	92	Calm	0	0			10s		Calm	0.01	0.3	Cloudy	
Omaha, Nebraska	28.62	726.9	29.66	753.4	55	12.8	87	SE	2	0.9		0	2s		Calm	0	0	Clear	
Oswego, New York	29.68	753.9	30.00	762.0	51	10.6	86	NW	12	5.4			10s		NW	0.22	5.6	Cloudy	
Pembina, Dakota	28.93	734.8	29.75	755.6	49.5	9.7	86	SE	6	2.7			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.00	762.0	30.03	763.5	51	10.6	72	W	16	7.2		0	0			0	0	Clear	
Phœnix, Arizona					73	22.8	54	S				0	5s		S	0	0	Fair	
Pike's Peak, Colorado	17.77	451.4	29.98	761.5	25	−3.9	77	SW	22	9.8			10s		S	0.03	0.8	Cloudy	
Pioche, Nevada	23.84	605.5	29.61	752.1	47	8.3	55	NW	8	3.6			10s		Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.36	745.7	30.18	766.6	47	8.3	85	NW	8	3.6			10s		NW	Inap.	Inap.	Cloudy	
Port Huron, Michigan	29.50	749.3	30.19	766.8	39	3.9	81	NW	5	2.2		5ck	5ks	NE	Calm	0	0	Cloudy	
Portland, Maine	29.68	753.9	29.73	755.1	52	11.1	93	SW	4	1.8			Fog		SW	0.23	5.8	Foggy	
Portland, Oregon	29.96	761.0	30.06	763.5	45	7.2	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.59	624.6	29.95	760.7	58	14.4	23	S				0	0			0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.06	763.5	73	22.8	67	NE	12	5.4		0	0			0	0	Clear	
Red Bluff, California	29.53	760.0	29.89	759.2	53	11.7	73	N	5	2.2		0	0			0	0	Clear	
Rochester, New York	29.42	747.3	30.04	763.0	47	8.3	85	W	12	5.4			10s		NW	0.40	10.2	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.07	763.8	37	2.8	100	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Sacramento, California	29.81	757.2	29.89	759.2	51	10.6	78	S	4	1.8		1c	0	S		0	0	Clear.	
St. Louis, Missouri	29.55	750.6	30.13	765.3	53	11.7	73	S	12	5.4			10s		Calm	0	0	Cloudy	
St. Marks, Florida	30.16	765.8	30.17	766.3	57	13.9	68	N	6	2.7		0	0			0	0	Clear	
St. Paul, Minnesota	29.04	737.6	29.87	758.7	44	6.7	92	SE	20	8.9			10n		Calm	0.21	5.3	Heavy rain	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.49	647.4	29.82	757.4	51	10.6	72	Calm	0	0			10s		Calm	0.02	0.5	Cloudy	
San Antonio, Texas	29.36	745.7	29.93	760.2	67	19.4	90	SE	3	1.3		2cs	5ks	Calm	SE	0	0	Cloudy	
San Diego, California	29.91	759.7	29.98	761.5	62	16.7	71	W	10	4.5		0	5s		W	0	0	Fair	
Sandusky, Ohio	29.55	750.6	30.24	768.1	44	6.7	67	W	14	6.3			10s		Calm	0	0	Cloudy	
Sandy Hook, New Jersey	29.95	760.7	29.98	761.7	53	11.7	79	W	29	13.0		2ck	0	NW		0	0	Fair	
San Francisco, California	29.88	758.9	29.95	760.7	53	11.7	86	W	3	1.3		0	0			0	0	Clear	
Santa Fé, New Mexico	23.23	590.0	29.77	756.1	44	6.7	67	E	1	0.4		Haze	5s		W	0.03	0.8	Fair	
Savannah, Georgia	30.11	764.8	30.21	767.3	54	12.2	79	N	4	1.8		0	0			0	0	Clear	
Shreveport, Louisiana	29.89	759.2	30.11	764.8	65	18.3	84	SE	4	1.8		0	0			0	0	Clear	
Smithville, North Carolina	30.18	766.6	30.22	767.6	53	11.7	73	N	7	3.1		0	0			0	0	Clear	
Springfield, Massachusetts	29.68	753.9	29.80	756.9	53	11.7	73	W	4	1.8		1ck	2k	W	NW	0.01	0.3	Fair	
Stanwix, Arizona																			
Stockton, Texas	26.88	682.7	29.88	758.9	69	20.6	52	S	8	3.6			10s		S	0	0	Cloudy	
Thatcher's Island, Mass	29.73	755.1	29.79	756.7	50	10.0	86	W	16	7.2		5cs;k	5s	W	NW	0.32	8.1	Cloudy	
Toledo, Ohio	29.54	750.3	30.23	767.8	46	7.8	69	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
Tucson, Arizona	27.47	697.7	30.02	762.5	74	23.3	42	SW				0	5s		SE	0	0	Fair	
Tybee Island, Georgia	30.15	765.8	30.18	766.6	62	16.7	66	NE	20	8.9		0	0			0	0	Clear	
Umatilla, Oregon	29.68	753.9			37	2.8	90	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.94	760.5	30.20	767.1	57	13.9	69	SE	10	4.5		0	0			0	0	Clear	
Virginia City, Montana	24.17	613.9	29.65	753.1	38	3.3	90	Calm	0	0			10s		Calm	0.53	13.5	Cloudy	
Visalia, California	29.57	751.1	29.94	760.5	51	10.6	72	NW	2	2.9		0	0			0	0	Clear	
Washington, D. C.	30.04	763.0	30.16	766.1	51	10.6	62	NW	6	2.7		0	5s		N	0	0	Fair	
Wickenburg, Arizona					44	6.7	6	NW				0	0			0	0	Clear.	
Wilmington, N. Carolina	30.14	765.5	30.22	767.6	52	11.1	72	N	4	1.8		0	0			0	0	Clear.	
Winnemucca, Nevada	25.52	648.2	29.88	758.9	30	3.9	63	NE	8	3.6		10k	0	W		0	0	Cloudy	
Wood's Holl, Mass	29.81	757.2	29.86	758.4	54	12.2	73	NW	11	4.9		0	2s		NW	0.22	5.6	Fair	
Yankton, Dakota	28.44	722.4	29.71	754.6	48	8.9	85	SE	3	1.3			10s		SW	0	0	Cloudy	
Yuma, Arizona	29.66	753.4	29.73	755.1	65	18.3	48	W	12	5.4		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.72	754.9	29.77	756.1	31.0	—0.6	95	S	14	6.3			9s			0	0	Cloudy	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.93	760.2	29.95	760.7	82	27.8	78	NE	2.4	1.1		4k	4ks	NE		Inap.	Inap.	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	80	26.7	78	Calm	0	0		2ck	2s	Calm		0	0		James Gall.
Navassa, W. I.	29.84	757.9	29.92	760.0	84	28.9		NE			1					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					87	30.6	80	Calm				8ck	4ks	E					G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.82	757.4	29.84	757.9	84	28.9	83	SE				2k	2ks		SE				L. Y. Bigard.
Paramaribo, D. Guiana, S. A.			30.01	762.2	82	27.8	83	E			2	0	5k			0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1			68.8	20.4	82	Calm			0		10ks			0.09	2.3	Cloudy.	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,590 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,190 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.93	760.2	55	12.8	54	12.2	87	SW	14	6.3			9k		W	0	0				
Navy Yard, Pensacola, Fla.	30.30	769.6			65	18.3	63	NE	19	8.5						0	0			Blue sky	
Navy Yard, Portsmouth, N.H	30.08	764.0	67	19.4	49	9.4	92	Calm	0	0						0.3	8.			Clear	
Naval Hospital, Yokohama, Japan	29.77	756.1	67	19.4	66	18.9	50	WSW			5		2k		SW	0	0			Fair	
Adams, Indio Pt. Light, Buenos Ayres	29.76	755.9	67	19.4	59	15.0	88	NE			3		10		NE	Heavy	Heavy	Light	NE	Raining	
Alert, Vladivostok	29.70†	754.4†	51	10.6	51	10.6	65	NW			1-4		10		NW					Squally	
Alliance, Constantinople, Turkey.	30.03	762.7	64	17.8	62	16.7	72	N&E			2		8		S&E					Cloudy	
Ashuelot, Tientsin, China	30.25	768.3	64	17.8	47	8.3	48	Calm			0		0								
Canonicus, New Orleans, La	30.12	765.0	48	8.9	63	17.2	72	E			2		0							Clear	
Colorado, New York, N. Y.	30.04	763.0	59	15.0	52	11.1	79	W	9	4.0			4		W	0	0			Light fog	
Despatch, Constantinople, Turkey.	30.07	763.8	81	27.2	61	16.1	77	N			2		7		NE					Clearing	
Franklin, Norfolk, Va.	30.20	767.1	54	12.2	55	12.8	87	NW	2	0.9			1		NW	0	0			Clear	
Frolic, N. 20° 28′, W. 65° 47′	30.11	764.8	83	28.3	83	28.3	87	E			4		9kn		N&E	Blank	Blank	Moderate.	N&E	D. clouds	
Gettysburg, Naples, Italy	29.81‡	757.2‡			65	18.3	94	WSW			1		1		Calm	0	0			D. clouds	
Kearsarge, Pt. de Galle, Ceylon	29.95	660.7			80	26.7	96	SSE			2		8		S	4.1	104.	Long	S&E	D. clouds	
Lackawana, Esquimault, B. C.	30.07	763.8			46	7.8	84	NW			1		6		NW					D. clouds	
Marion, Smyrna, Turkey	30.10	764.5	71	21.7	71	21.7	52	N			3		5		Calm	0	0	Smooth		D. clouds	
Michigan, Chicago, Ill.	29.66	753.4	61	16.1	49	9.4	63	S			1		0			0	0			Fair	
Monocacy, N. 40° 15′, E. 142° 00′	29.69	754.1	64	17.8	64	17.8	94	ESE			3		2		SE	Light	Light	Heavy	SSE	D. clouds	
Monongahela, N. 36° 54′, W. 44° 44′	29.99	761.7	70	21.1	70	21.1	75	N			6-7		kn					Moderate.	N	Squally	
New Hampshire, Port Royal, S. C.	30.35	770.9			59	15.0	70	N	21	9.4			0			0	0			Blue sky	
Omaha, Valparaiso, Chili	30.09	764.3	61.5	16.4	61.5	16.4	80	Calm	0	0			4		Calm	0.13	3.3	Moderate.	N	Bright	
Onward, Callao, Peru	30.04†	763.0†	70	21.1	68	20.0	84	SSE			1		10					Long	W	Overcast	
Ossipee, N. 41° 46′, W. 69° 52′	29.84	757.9	64	17.8	51	10.6	86	WNW			4		3		NW			Ground	SE	D. clouds	
Palos, Shanghai, China	30.21	767.3	60	15.6	55	12.8	56	NNW			1-2		3		W	0	0			Clear	
Pensacola, Mare Island, Cal.	30.00	762.0			57	13.9	100	SW			2		7			0	0			Overcast	
Plymouth, Norfolk, Va.	30.44	773.2	58	14.4	55	12.8	80	N			1		0							Clear	
Ranger, Nagasaki, Japan	30.32	770.1			62	16.7	74	NW			3		3		NW	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.95	760.7			71	21.7	90	ESE			1		2		SW					D. clouds	
Santee, Annapolis, Md.	30.16	766.1	58	14.4	53	11.7	61	NW			4		1			0	0			Clear	
St. Louis, League Island, Pa	29.95	760.7	57	13.9	55	12.8	68	WNW	12	5.4			0			0	0			Clear	
Tennessee, Yokohama, Japan	29.74	755.4	69	20.6	65	18.3	63	SW	15	6.7			2			0	0	Light	S&W	D. clouds	
Trenton, Marseilles, France	30.14	765.5	68	20.0	66	18.9	50	N	18	8.0			4		N	0	0			Blue sky	
Vandalia, N. 37° 30′, E. 16° 52′	30.12	765.0	72	22.2	72	22.2	54	WNW			3		5		W					D. clouds	
Wabash, Boston, Mass.	29.82	757.4	56	13.3	52	11.1	79	N	6	2.7			9		Calm	0.55	14.0			Raining	
Wyoming, Washington, D. C.	30.57†	776.5†	58	14.4	54	12.2		W			1		4		W					D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Sea-swell. Character.	Direction from—	Weather.	Observer.
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 25° 43′, E. 120° 16′			30.37*	771.4*	68	20.0	70	ENE			4		8		ENE	Small	NE	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 20′, W. 134° 40′			30.53†	775.4†	74	23.3		SSW			5		7		S	Smooth	SW;NW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Sea-swell. Character.	Direction from—	Weather.	Observer.
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Sea-swell. Character.	Direction from—	Weather.	Observer.
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 34° 58′, E. 140° 14′			29.97*	761.2*	72	22.2	95	NW			3		8		NW	Swell	S	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 29° 59′, E. 175° 39′			29.96	761.0	74	23.3	72	N			3		6		NE	Confused	N	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Sea-swell. Character.	Direction from—	Weather.	Observer.
S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsc.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.65*	753.1*	52	11.1		W			7		5		NNW				Captain Sargent.
S. S. Ohio, N. 51° 36′, W. 15° 44′			29.80	756.9	48	8.9	85	WSW			6		10		WSW	Large	WNW	Overcast	Captain Morrison.
S. S. Pennsylvania, N. 39° W. 73°			29.95†	760.7†	60	15.6	94	WNW			6		8		NW	Moderate.	WNW	Clear	Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Off Hunting Islands, S. C.			30.20	767.1	66	18.9	74	NNE	11	1.9		0	0			Short		Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 250 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 13, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.23	767.8	72.5	22.5	55	NNW			1		0			0	0	Clear	Michel.
Algiers			30.20	767.0	70.9	21.6	72	ENE			1		0			0	0	Clear	Peter.
La Calle			30.29	769.3	68.4	20.2	77	ENE			3		1			0	0	Very fair	Fleury.
Tunis			30.32	770.0	71.6	22.0	58	NW			3		3			0	0	Pretty fair	Jacques.
Sfax																			Husson.
Saida			30.19	766.9	76.6	24.8	37	Calm			0		1			0	0	Very fair	Millot.
Tebessa			30.22	767.5				Calm			0		0			0	0	Clear	Bourgeois.
Geriville			30.17	766.4	69.4	20.8	40	S			2		2			0	0	Fair	Lemaillot.
Laghouat			30.27	768.9	69.8	21.0	34	E			2		0			0	0	Clear	François.
Biskra			30.37	771.5	79.3	26.3	32	NW			1		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7?? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.70	754.4	30.25	768.4	55.8	13.2	51	SW			1		3			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.39	746.6	30.17	766.1	47.5	8.6	65	W			3		9			0.083	2.1		Dr. Wierzbiski.
Eperies	29.26	743.1	30.15	765.8	47.7	8.7	58	NW			2		9k;s		SE	0	0		Julius Mikolik.
Gratz	28.98	736.2	30.24	768.2	54.1	12.3	77	SE			2		0			0	0		Andreas Rospini.
Hermannstadt	28.76	730.4	30.19	766.9	51.8	11.0	53	WNW			4		6			0	0		Prof. Reissenberger.
Kremsmünster	28.82	732.1	30.16	766.1	56.5	13.6	54	W			3		5			0.118	3.0		Prof. C. Wagner.
Lemberg	29.08	738.5	30.09	764.2	44.2	6.8	78	NW			1		3			0.016	0.4		Dr. T. Stanecki.
Pola	30.20	767.1	30.32	770.0	60.8	16.0	57	WNW			1		10c			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.97	761.2	30.25	768.4	54.3	12.4	61	N			2		5			0	0		Karl Stancel.
Trieste	30.19	766.8	30.29	769.4	57.9	14.4	78	W			1		1			0	0		P. Busin.
Vienna	29.53	750.0	30.23	767.9	53.6	12.0	72	W			1		10			0.146	3.7		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.60	726.5	30.11	764.8	54.0	12.2	68	SW			4		9			0	0		Royal Observatory.
Brussels	29.80	757.0	30.00	762.1	55.0	12.8	78	SW			6		10		WSW	0	0		
Furnes	29.94	760.5	29.97	761.1	55.9	13.3	92	WSW			6		10			0.051	1.3		
Maeseyck	29.87	758.7	30.00	762.0	55.9	13.3	79	SSW			8		10			0.016	0.4		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.16	740.7	29.26	743.2	51.0	10.6		S	9	4.0			7			0.025	0.63	Misty	W. Boswell.
Ardrossan	29.34	745.2	29.36	745.7	57	13.9		SW			5		10					Raining	William McNeil.
Armagh, Observatory			29.44	747.8	60.7	15.9		SW	30	13.4			3					Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.62	752.3	61.3	16.3		SW	38	17.0			7					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.58	751.3	62.8	17.1		SSW			2		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.19	741.4	29.59	751.6	60.0	15.6		NW			6		10			0.53	13.5	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	87	30.6		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.80	756.9	61.0	16.1		SW			4		10					Overcast	H. Todd. [H. C.
Cardington			29.81	757.2	61.0	16.1		SW			6		10					Overcast	John McLaren.
Chatham, School M. E	29.78	756.4	29.90	759.4	59.2	15.1		SW			2		9					Threatening	Lt. W. G. Morris, R. E.
Dartmoor	28.47	723.1	29.94	760.5	52.0	11.1		SW			5		7					Snowing	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.42	747.3	29.44	747.8	62	16.7		SW			6		8					D. clouds	J. Mac Gowan.
Dover	29.89	759.2	29.93	760.2	58	14.4		WSW			5		7					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.62	752.3	63.0	17.2		W	18.4	8.2			6					Squally	Thomas Mackereth.
Falmouth, Observatory	29.80	756.9	30.03	762.7	58.4	14.7		SSW			4		10					Overcast	The Staff.
Fort Napier, (Natal)	27.62	701.5	29.82	757.4	84.0	28.9		E			3		1					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.93	760.2	83	28.3		W			2		4					D. clouds	
Galway, Queen's College					58	14.4		NNW			7		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.13	765.3	30.16	766.1	70.0	21.1		E			3		4					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.14	740.1	29.35	745.5	55.3	12.9		SSW			8		10					Raining	D. G. Maclean.
Great Yarmouth	29.77	756.1	29.77	756.1	61	16.1		WSW			4		5					Squally	G. T. Watson.
Greenwich, Royal Obs'y	29.70	754.4	29.87	758.7	60.7	15.9		SW			4		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.78	756.4	29.99	761.7	60	15.6		SSW			2		8					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.94	760.5	59	15.0		W			6		8k			0.2	5.	Fair	M. P. Moyle.
Holyhead	29.60	751.8	29.66	753.4	59	15.0		SSW			6		10					Overcast	John Tilston.
Jersey	29.75	755.6	30.04	763.0	60.5	15.8		SW			6		10			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			29.89	759.2	58.8	14.9		SW	24	10.7			10kd					Threatening	The Staff.
Kingstown	29.58	751.3	29.61	752.1	63	17.2		SW			6		7					D. clouds	George Mitchell.
Leicester, Museum			29.74	755.4	57.2	14.0		SW			5		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.20	767.1	30.28	769.1	70.0	21.1		N			1		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.59	751.6	29.68	753.9	53	11.7		NW			1		10					Raining	W. D. Penny.
Nassau, (Bahamas)			30.01	762.2	80.5	26.9		NE			5		7					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.53	750.0	29.72	754.9	61.1	16.2		SW			6		10k;d		SW	0.122	3.10	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.21	741.9	29.72	754.9	61.2	16.2		SW			6		9					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.84	757.9	60	15.6		SW			3		10					Overcast	F. Lucas
Plymouth	29.86	758.4	29.94	760.5	59.0	15.0		SSW			4		10					Drizzling	John Merrifield.
Roche's Point	29.67	753.6	29.72	754.9															W. Kennedy.
Saint Ann's Head	29.64	752.8	29.80	756.9	59	15.0		SSW			7		7					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			29.10	739.1	50.8	10.4		SW	18	8.0			10					Misty	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.17	766.3	58.8	14.9		NE			2		7			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.42	747.3	29.65	753.1	62.2	16.8		W			5		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.44	747.8	29.47	748.5	59.6	15.3	83	SW			6		5			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					58.9	14.9		SW			6		9					Threatening	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.10	739.1	50	10.0		SW			6		10					Threatening	John Smith.
Stratfield Turgiss	29.68	753.9	29.89	759.2	59.4	15.2		SW			3		8					Squally	Rev. C. H. Griffith, F.M.S.
Thurso			29.10	739.1	52	11.1		S			4		10					Overcast	John Trotter.
Truro, Royal Institution			29.95	760.7	60	15.6		SW			6		10					Gloomy	W. Newcombe.
Valencia, Observatory			29.60	751.8	59.6	15.3		SSW	47	21.0			5					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		S			4		10			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.98	761.5	30.02	762.5	69.3	20.7	63	NNW	10	4.5		0	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.54	750.3	65.5	18.6	78	NW			3		10kn			0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.32	744.7	59.0	15.0		W			8		10k			0.26	6.6	Cloudy	Andrew Gibb.
Mauritius, Observatory	30.01	762.2	30.20	767.1	74.8	23.8	68	E	21.5	9.6		0	4		E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.77	756.1	29.86	758.4	57.0	13.9	92	WSW	6	2.7			10			0.01	0.3	Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.18	741.2	53	11.7		W			7		10			0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			29.11	739.4	42	5.6		SW			7		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 41° 25′, W. 55° 13′			29.74	755.4	69	20.6		W			2		4			10*	NE;E;S	D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 40° 30′, W. 66° 20′			29.91	759.7	58	14.4		NW			6		7			5	NW	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cuto.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 32′, W. 34° 4′			29.75	755.6	49	9.4		NW			6		5			5	NW	Hailing	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 47° 40′, W. 30° 0′			29.56	750.8	52	11.1		N			7		9			7	N	Showery	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.18	665.0			68.0	20.0	91	E			2	4cks		E		0.3	8.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.71	754.7	29.76	755.9	47.3	8.5	70	SW			4		10						
Fanöe	29.54	750.2	29.56	750.7	44.2	6.8	98	S			6		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.67	753.6	29.71	754.7	27.5	—2.5	98	NE			8		8						
Thorshavn, (Faröe)	28.94	735.1	28.98	736.0	37.0	2 8	96	E			5		10					Rain & snow	
Vestervig	29.34	745.3	29.51	749.6	50.7	10.4	98	WSW			4		10					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.63	752.5	30.18	766.5	55.4	13	72	SW			1		2		SW	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	29.96	761.0	30.08	763.9	59.7	15.4	75	WSW			2		8		SW	0.157	4.0	Very cloudy	Bonvarne, Director.
Avignon, Normal School	30.19	766.8	30.27	768.8	66.2	19	49	NNE			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.62	752.3	30.18	766.5	62.1	16.7	40	SW			2	5c		W		0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.92	760.0	30.09	764.2	67.3	19.6	46	S	4.5	2.0						0	0		Albert Cheux.
Beauvais	29.82	757.5	30.11	764.7	58.5	14.7	65	SW			4		5		WSW	0.059	1.50	Cloudy	Normal School.
Besançon	29.36	745.7	30.25	768.4	56.8	13.8	62	SSW			3		2		W	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.41	747.0	30.33	770.4	57.4	14.1	53	S			6	2c		SW		0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.62	752.3	30.17	766.4	58.6	14.8	58	SE			2		0			0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.72	754.8	29.93	760.3	60.3	15.7	75	SW			5		10		SW	0.020	0.50		The Staff.
Carcassonne, Normal School	29.77	756.2	30.18	766.6	64.8	18.2	60	E			4		5		E	0	0	Cloudy	Vateau, Director.
Caen	29.98	761.6	30.06	763.5	61.9	16.6	66	NE			4		2		NE	0	0	Slightly cl'dy	Normal School.
Chartres, Normal School	29.51	749.5	30.07	763.7	64.4	18	71	SW			4		6			0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.83	757.6	30.15	765.7	61.7	16.5	69	SSW			4		5ck		SSW	0.004	0.1	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.82	732.1	30.15	765.9	66.2	19.0	32	SE			1		0			0	0	Clear.	Alluard, Director.
Commercy, Normal School	29.30	744.2	30.18	766.5	55.9	13.3	53	W			6	2c		W		0.098	2.5	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.17	741.0	30.32	770.0	68.4	20.2	61	E			1		2		SE	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.87	758.8	30.09	764.2	63.7	17.6	46	S			6		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.82	757.4	30.13	765.2	59.4	15.2	60	SW			2		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.32	744.7	30.25	768.3	50.5	10.3	89	W			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.00	761.9	30.10	764.4	62.6	17.0	70	S			4		8		SW	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.52	749.7	30.17	766.4	52.7	11.5	80	SSE			2		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.20	741.7	30.29	769.4	55.0	12.8	75	NE			4		2		S	0	0	Slightly cov.	Normal School
Nismes, Normal School	30.06	763.5	30.26	768.6	63.5	17.5	76	SW			1		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.77	756.1	30.14	765.6	61.2	16.2	49	S			4		0			0	0	Clear.	Bernard, Director.
Paris, Observatory	29.89	759.1	30.13	765.2	61.7	16.5	48	SSW			2		2cs			0.005	0.12	Slightly cl'dy	National Observatory.
Privas	29.17	740.8	30.24	768.1	56.3	13.5	41	S			2		0			0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.10	764.4	30.13	765.2	65.5	18.6	52	SE			3		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.99	761.7	30.08	763.9	61.2	16.2	66	SSW			4		2		SW	0.224	5.7	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.08	738.6	30.11	764.8	78.8	26	25	W			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.57	751.1	30.28	769.1	62.6	17	67	ESE			2		0			0	0	Clear	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	81.3	27.4										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.25	768.3	65.1	18.4	69	SSW			1		7			0	0	Partly cl'dy	The Staff.
Mont-Louis	25.08	637.1	30.40	772.1	59.0	15.0	23	SSW	14.9	6.66			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.84	758.0	30.12	765.0	64.4	18.0	46	SSW			3-4		0			Inap	Inap.		Marié Davy, Director.
Perpignan			30.27	768.9	59.9	15.5	62	E	5.6	2.50			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.44	544 6			42.1	5.6		SE			2		0					Clear.	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.74	577.5			56.8	13.8		SE			1		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.96	761.0	30.13	765.2	63.9	17.7	47	SSW			3		0			0	0		E. Renou.
Toulouse, Observatory	29.48	748.7	30.21	767.2	66.2	19.0	36	SE			3		0			0	0		The Staff.
Tours	29.96	760.9	30.15	765.9	63.0	17.2		SSW			3		0			0	0	Clear.	C. Marquet.
Versailles, (near Paris)			30.13	765.2	62.6	17.0	52	WSW			3		0			0	0	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.27	768.8	30.30	769.5	56.7	13.7	78	ESE	6.5	2.9			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.82	757.4	29.99	761.7	51.8	11.0	72	S			2		8			0.044	1.1		Prof. Arndt.
Breslau	29.59	751.5	30.12	765.0	51.8	11.0	51	WSW			4		8			0.082	2.08		Royal University Obs'y.
Carlsruhe	29.72	755.0	30.15	765.8	58.6	14.8	64	SW			4		9			0	0	Light fog	Albert Senz.
Cassel	29.47	748.6	30.08	764.0	52.5	11.4	85	SSW			3		9	SW		0.044	1.13		Dr. H. Möhl.
Crefeld	29.81	757.1	29.97	761.2	58.1	14.5	72	SW			6		9			0.08	2.		Director Lose.
Emden	29.87	758.6	29.90	759.5	52.3	11.3	97	SW			6		10			0.197	5.0		Prof. Prestel.
Frankfort on the Main	29.78	756.3	30.14	765.6	55.6	13.1	73	SSW			2		8			0.063	1.6		Physical Society.
Friedrichshafen	28.81	731.7	30.26	768.6	52.9	11.6	68	W			1		5	WNW		0	0		M. Wilhelm.
Hamburg	29.72	755.0	29.80	756.8	45.1	7.3	100	S			3		10			0.295	7.5	Rainy	Captain F. Hegemann.
Kiel	29.72	754.8	29.74	755.3	45.0	7.2	91	SSW			4		10			0.144	3.65		Prof. G. Karsten.
Königsberg, (Prussia)	29.77	756.1	29.85	758.2	46.8	8.2	73	W										Cloudy	Prof. E. Luther.
Köslin			29.89	759.2	48.0	8.9		SW			2		4			0.189	4.8		H. Müller.
Leipsic, Observatory	29.65	753.2	30.08	764.0	49.6	9.8	92	SSW			3		10	SW		0.102	2.6		Prof. Bruhns.
Memel, Naval School	29.69	754.1	29.74	755.3	48.4	9.1	71	W			8		10n						Reinbrechtvon Skalweit.
Neufahrwasser	29.87	758.6	29.88	759.0	48.7	9.3	72	W			4		9			0.098	2.5		A. Lothes.
Posen	29.80	756.9	30.09	764.3	50.9	10.5	64	W			8		10					Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.65	753.2	30.21	767.2	59.7	15.4	57	S			3		9	W		0.084	2.18		Dr. Schur.
Stuttgart	29.22	742.3	30.17	766.3	56.3	13.5	59	W			0		4	W		0	0		Prof. Schoder.
Treves, (Trier)	29.48	748.7	30.00	762.0	58.1	14.5	57	WSW			7		7			0.011	0.29		Prof. Flesch.
Weissenburg, (Bavaria)	28.67	728.2	30.19	766.7	54.1	12.3	66	WSW			2		10		W	Blank	Blank		Dr. Von Bebber.
Wustrow, Naval School	29.87	758.7	29.91	759.7	46.4	8.0	88	SSW			4		10					Covered	E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.82	757.3	30.20	767.1	67.6	19.8		N										Clear.	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.92	760.0	29.97	761.3	89.3	31.8	56	WSW	16.0?	7.2?			0			0	0	Blue sky	
Deesa	29.52	749.8	29.99	761.8	88.5	31.4	45	E					0			0	0	Blue sky	
Bombay	29.90	759.6	29.94	760.5	84.1	28.9	85	WNW	6.0	2.7			8	NW	NNW	0	0	D. clouds	
Poona	27.85	707.4	29.84	757.9	82.5	28.1	62	NE					10			0	0	D. clouds	
Lahore	29.23	742.3	29.97	761.3	80.0	26.7	48	Calm	0.9	0.4			0			0	0	Blue sky	
Belgaum	27.35	694.8	29.91	759.6	73.9	23.3	83	Calm	0	0			9		E	0.94	23.9	Lightning	
Bangalore																			
Roorkee	29.04	737.7	29.95	760.6	79.8	26.6	53	Calm	2.0	0.9						0	0		
Agra	29.37	745.9	29.93	760.2	83.8	28.8	64	W								0	0		
Trichinopoly																			
Nagpur	28.90	734.1	29.94	760.5	84.6	29.2	53	Calm	2.3	1.0			3			0	0	D. clouds	
Madras																			
Lucknow	29.58	751.4	29.96	760.9	80.3	26.8	71	Calm	1.3	0.6						0	0	Blue sky	
Allahabad	29.64	752.8	29.95	760.7	80.1	26.7	76	Calm	0.9	0.4			0			0	0	Blue sky	
Patna	29.74	755.5	29.93	760.1	85.8	29.9	83	W	1.0	0.4			5	W	SW	0	0	D. clouds	
Hazaribagh	27.93	709.4	29.95	760.8	77.6	25.3	58	NW	3.6	1.6			4			0.01	0.3		
Cuttack	29.86	758.4	29.94	760.5	81.0	27.2	80	E	1.6	0.7			6			0	0	D. clouds	
Calcutta (Alipore)	29.93	760.3	29.96	760.9	78.7	25.9	93	W	2.0	0.9			7			0	0	D. clouds	
Goalpara	29.52	749.7	29.91	759.7	78.8	26.0	82	Calm	1.5	0.7			0			0.02	0.5	Blue sky	
Chittagong	29.88	758.9	29.97	761.3	79.9	26.6	87	NNE	1.3	0.6			4			0	0	Blue sky	
Sibsagar	29.62	752.2	29.96	760.8	76.9	24.9	86	SSW	1.6	0.7			10	W	W	0.22	5.6	D. clouds	
Rangoon																			
Jubbulpore	28.60	726.5	29.97	761.3	80.0	26.7	76	NE	1.9	0.8			2	NE		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.41	569.3	30.35	770.8	38.5	3.6	66	NW			2		5	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.37	568.1	30.35	770.8	35.6	2.0		WNW			2		7	ESE		0	0		Signora Ernesta Manfredi.
Udine	29.88	758.9	30.30	769.5	57.6	14.2	33	S	0.7	0.3			4			0	0		Prof. Giovanni Olodig.
Padua	30.17	766.4	30.28	769.2	59.2	15.1	51	SSW	1.8	0.8			7	NW		0	0		Prof. Dott. Lorenzoni.
Vicenza	30.08	763.9	30.27	768.9	60.6	15.9	47	NE	0.7	0.3			2			0	0		Conte Alm. Da Schio.
Verona	30.04	763.0	30.26	768.7	69.3	20.7	64	SW			1		0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.25	743.0	30.30	769.5	57.6	14.2	58	W			2		0			0	0		Prof. Giuseppe Calza
Milan	29.77	756.1	30.30	769.6	59.5	15.3	64	SW			2		3	WNW		0	0		Ab. Gio. Capelli.
Pavia	29.95	760.6	30.30	769.5	58.6	14.8	55	N			1		1			0	0		Prof. Gio. Cantoni.
Moncalieri	29.39	746.4	30.31	769.9	58.8	14.9	63	SSE	0.7	0.3			5			0	0		Prof. P. F. Denza.
Mondovi	28.36	720.3	30.30	769.5	57.9	14.4	58	NW			4		3	NNW		0	0		Prof. D. C. Bruno.
Porto Maurizio	30.08	763.9	30.30	769.6	64.0	17.8	63	E			4		4			0	0		Prof. L. Vassallo.
Genoa	30.11	764.8	30.28	769.1	66.2	19.0	49	SW	1.8	0.8			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.04	763.1	30.30	769.7	59.9	15.5	45	N	2.5	1.1			0			0	0		Dott. G. Manzi.
Parma	29.99	761.7	30.31	769.8	63.7	17.6	39	NNE			2		1			0	0		Prof. P. Pigorini.
Florence	30.06	763.4	30.32	770.0	65.3	18.5	45	NNW			4		1	NW		0	0		Cav. F. Meucci.
Leghorn	30.19	766.9	30.28	769.1	64.8	18.2	66	SSW	2.5	1.1			0			0	0		Prof. P. Monte.
Siena	29.08	738.5	30.30	769.5	62.2	16.8	47	SE	0	0			5	N		0	0		Prof. L. Toscani.
Urbino	28.70	728.9	30.28	769.0	55.6	13.1	72	N			2		5			0	0		Prof. P. Serpieri.
Pesaro	30.27	768.9	30.32	770.2	58.3	14.6	79	NW	26.2	11.7			10			0	0		Prof. Luigi Guidi.
Ancona	30.22	767.5	30.33	770.3	60.1	15.6	65	SE			4		1			0	0		Prof. F. DeBosis.
Grosseto	30.20	767.1	30.32	770.0	64.8	18.2	51	WSW			4		4	S		0	0		Avv. P. Ponticelli.
Rome	30.12	765.0	30.30	769.5	66.2	19.0	58	N	0.7	0.3			2			0	0		Prof. F. A. Secchi.
Naples, O. U.	30.04	763.1	30.24	768.2	69.8	21.0	51	S			1		1	SW		0	0		Prof. L. Palmieri.
Lecce					64.4	18.0	62	ENE	21.7	9.7			7			0	0		Prof. C. De Giorgi.
Cosenza	29.42	747.2	30.31	769.9	63.9	17.7	68	NW	1.8	0.8			1			0	0		Prof. F. D. Conti.
Cagliari	30.01	762.3	30.20	767.1	68.0	20.5	62	W			2		4	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.23	767.8	30.28	769.0	69.8	21.0	64	E			2		5			0	0		Prof. F. Cafiero.
Palermo	29.96	761.0	30.21	767.4	67.8	19.9	55	NE	3.1	1.4			6			0	0		Prof. G. Cacciatore.
Caltanissetta	28.28	718.4	30.23	767.7	61.5	16.4	61	E			1		4			0	0		Prof. A. Pagani.
Syracuse	30.16	766.0	30.23	767.9	69.8	21.0	57	NE			2		5	E		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.79	756.7	30.35	770.8	65.8	18.8	51	WNW	0	0			3			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.88	758.9	29.98	761.5	58.9	14.9	76	Calm	0	0						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	28.11	587.0	30.16	766.0	50.0	10.0	81	Calm	0	0		0	0			0	0	Very fine	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.8 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.97	761.1	29.97	761.1	56.7	13.7		SW			5					0.028	0.7		
Groningen	29.70	754.3	29.75	755.7	52.7	11.5		WSW			5					0.205	5.2		
Helder	29.75	755.7	29.75	755.7	57.2	14.0		SW			6					0.217	5.5		
Hellevoetsluis			29.90	759.4	56.8	13.8	88	SW			6								
Utrecht	29.84	758.0	29.89	759.2	55.9	13.3	87	SW			6		8			0.079	2.0	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.37	746.0	29.43	747.4	42.8	6.0	74	SSE	11.6	5.2	.....	.....	10	.....	.....	0.315	8.0	.....	
Brōno	29.13	739.9	29.17	740.9	41.0	5.0	54	SE	18	8	.....	.....	2	.....	.....	0	0	.....	
Christiania	29.32	744.7	29.47	748.4	46.6	8.1	46	SSW	11	5	.....	.....	10	.....	.....	0	0	.....	
Tromsö	28.76	730.5	28.80	731.6	37.4	3.0	87	SW	20	9	.....	.....	10	.....	.....	0.307	7.8	Light rain	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.44	747.8	29.63	752.6	67.1	19.5	70	NW	11.9	5.3	.....	.....	4	.....	.....	0.157	4.0	.....	Dr. J. A. Sampaio
Campo Major	29.12	739.7	30.12	765.0	75.6	24.2	35	SSE	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.94	760.4	30.01	762.2	75.0	23.9	61	SW	6.9	3.1	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.73	755.2	30.09	764.2	71.2	21.8	48	S	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.62	752.3	29.69	754.1	70.9	21.6	86	SW	13.7	6.1	.....	.....	3	.....	.....	0.496	12.6	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.61	752.0	30.04	762.9	44.8	7.1	66	W	18	8	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.41	747.0	29.84	757.8	43.5	6.4	83	WSW	7	3	.....	.....	7	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.32	744.7	29.56	750.9	43.2	6.2	76	SW	9	4	.....	.....	7	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch
St. Petersburg	29.48	748.9	29.50	749.3	42.8	6.0	83	S	16	7	.....	.....	9	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	29.01	736.8	29.33	745.0	39.6	4.2	100	S	18	8	.....	.....	10	.....	.....	.....	Raining	.....	Ch. Forsten.
Kieff	29.35	745.4	30.00	761.9	44.4	6.9	74	WSW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.10	764.5	30.17	766.3	56.5	13.6	61	W	9	4	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.17	766.3	30.19	766.8	58.3	14.6	72	N	4	2	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.29	743.9	29.84	757.9	46.8	8.2	69	S	9	4	.....	.....	7	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.89	759.3	30.10	764.5	48.0	8.9	71	SW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.41	747.0	29.43	747.5	37.0	2.8	93	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.67	728.1	30.02	762.5	80.1	26.7	48	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.22	767.5	30.13	765.4	59.7	15.4	96	SE	9	4	.....	.....	10	.....	.....	Blank	Blank	.....	Sebastianof.
Kasan	29.61	752.1	29.88	759.0	50.9	10.5	75	SW	4	2	.....	.....	3	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	30.04	763.0	30.43	772.8	39.4	4.1	.....	S	9	4	.....	.....	0	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.34	745.1	30.31	769.9	38.3	3.5	54	SSE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.15	765.7	30.38	771.7	55.4	13.0	63	NNE	11	5	.....	.....	0	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.65	727.6	30.36	771.2	56.7	13.7	64	NW	13	6	.....	.....	6	.....	.....	.....	Lightning	.....	Michelson.
Barnaul	29.74	755.3	30.28	769.1	34.2	1.2	96	Calm	0	0	.....	.....	4	.....	.....	Blank	Blank	.....	Meteorological Obs.
Yeniseisk	29.90	759.4	30.04	763.1	35.6	2.0	94	SW	7	3	.....	.....	3	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.13	765.2	30.27	768.8	54.5	12.5	42	Calm	0	0	.....	.....	7	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	38.7	3.7	83	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.69	710.9	30.17	766.4	70.0	21.1	36	NE	1.5	0.67	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.89	759.3	29.97	761.3	78.2	25.7	85	E	8.3	3.7	.....	1c	2k;ks	S	E	Inap.	Inap.	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.02	762.6	30.12	765.0	75.0	23.9	47	ESE	33.7	15.08	.....	0	1	.....	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	.....	.....	29.87	758.8	82.8	28.2	85	SW	0	0	.....	5s	1k	.....	.....	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.19	741.4	29.23	742.4	40.6	4.8		S			4		8			0.236	6.0		
Umea	29.13	740.0	29.19	741.3	41.0	5.0	78	SW			2		6			0.409	10.4		
Hernosand	29.18	741.1	29.23	742.4	46.8	8.2	93	SW			4		6			0	0		
Stockholm	29.26	743.1	29.43	747.5	47.1	8.4	81	WSW			4		0			0.008	0.2		
Wisby	29.48	748.9	29.54	750.4	47.5	8.6	76	W			6		0			0.012	0.3		
Sub-Series.																			
Upsala	29.34	745.2	29.41	747.1	46.2	7.9	58	WSW	10.3	4.6			0			0.045	1.15		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the cooperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.85	732.7	30.26	768.7	56.7	13.7	49	N			1		1			0	0	Clear	The Observatory.
Zurich	28.61	726.7	30.24	768.2	54.7	12.6	65	SW			1		2			0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.5 mm; Thermometer, +0.4 cent.; Relative Humidity, —22 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.23	767.7	57.6	14.2	61	NNE	11	5.0			7		N	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.28	769.2	63.9	17.7		NW			1		0						B. Stefanidès.
Valona			30.26	768.5	63.7	17.6		NW			2		0			0.12	3.	Clear	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.97	761.3	82.8	28.2	64	N			1		10cs			0	0	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	30.03	762.7	30.10	764.5	43.0	6.1	97	NE	23	10.3			10						Hon. J. Ferguson.
Brockville, Ontario			30.23	767.8	44	6.7		NW	1	0.4			10s		NW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.			30.00	762.0	44	6.7	92	N	15	6.7			10n		NE	2.48	63.0	Light rain	G. A. Blair.
Charlottetown, P. E. Island.			29.85	758.2	49	9.4	93	NE	8	3.6			10n			0.75	19.1	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.02	762.5	30.22	767.6	44.3	6.8	94	E			1		10s			0	0	Dull	James Smith, M. A.
Dalhousie, N. B.	30.12	765.0	30.16	766.1				NE			1					0.27	6.9	Cloudy	H. A. Johnson.
Esquimault, B. C.	29.90	759.4	29.94	760.5	47.3	8.5	100	Calm				0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			30.21	767.3	36	2.2	95	NE	35	15.6			10n			0.51	13.0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.92	760.0	29.98	761.5	45.6	7.6	80	NE	21	9.4			10s		NE	0.463	11.76	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.96	761.0	30	—1.1	98	Calm	0	0		0	2s		N	0	0	Fair	James Stewart.
Goderich, Ontario	29.38	746.2	30.19	766.8	44.7	7.1	84	Calm			0	10k	0			0	0	Dull	H. J. Strang, M. A
Granton, Ontario	29.08	738.6	30.20	767.1	41	5.0	91	SE			1		10n			0	0	Cloudy	James Grant.
*Halifax, N. S.	29.65	753.1	29.78	756.4	49	9.4	96	W	4	1.8		0	0			1.457	37.01	Clear	F. Allison, M. A.
Hamilton, Ontario	29.88	758.9	30.26	768.6	42.9	6.1	80	SW			2	4c	0	W		0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	30.21	767.3	30.23	767.8	44	6.7	76	E			3		10n			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.90	759.4	30.27	768.8	46	7.8	89	NW	1	0.4			10ks		W	0	0	Cloudy	S. Woods, M. A.
*Montreal, Quebec	30.04	763.0	30.24	768.1	42	5.6	98	Calm	0	0			10n		Calm	0.28	7.1	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.50	749.3	30.20	767.1	44	6.7	92	E	7	3.1			10n		SW	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.42	747.3	30.19	766.8	43.7	6.5	88	Calm			0	10ks	0			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.53	750.0	30.24	768.1	39	3.9	100	Calm	0	0		10k	0	NW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.76	755.9	29.81	757.2	50.6	10.3		S	2	0.9						0.90	22.9	Foggy	Peter Grant.
Port Stanley, Ontario	29.54	750.2	30.19	766.8	52	11.1	75	S	4	1.8			10n		S	Inap.	Inap.	Light rain	M. Payne.
*Quebec, Quebec	29.91	759.7	30.24	768.1	42	5.6	74	NE	13	5.8			10n		NE	0.06	1.5	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.77	756.1	30.25	768.3	41	5.0	98	W	3	1.3			10s		NW	Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B.	29.72	754.9	29.88	758.9	49	9.4	93	NW	2	0.9			10s			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.46	748.3	30.18	766.6	41	5.0	91	NW	4	1.8			10s			0	0	Cloudy	K. Stewart.
Stayner, Ontario			30.23	767.8	40	4.4	91	SE	4	1.8		0	2ks		W	0	0	Fair	R. J. Cole.
Stratford, Ontario	28.91	734.3	30.22	767.6	39.6	4.2	88	SE	4	1.8			10s			0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.83	757.7	29.86	758.4	49	9.4	97	E	12	5.4			10n			1.22	31.0	Light rain	T. C. Hill.
*Toronto, Ontario	29.86	758.4	30.25	768.3	41	5.0	94	NW	1	0.4		5ck	0	W		0	0	Fair	Magnetic Observatory.
Windsor, N. S.	29.72	754.9	29.82	757.4	47.0	8.3	100	NE	1	0.4			10n			0.02	0.5	Foggy	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					48.0	6.1	79	E				10ks	10s;n			0	0	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.95	760.7	30.18	766.6	47	8.3	85	NW	4	1.8			10s		Calm	0.10	2.5	Cloudy	
Alpena, Michigan	29.44	747.8	30.10	764.5	47	8.3	85	S	10	4.5			10s		Calm	0	0	Cloudy	
Atlantic City, New Jersey	30.17	766.3	30.19	766.8	48	8.9	70	W	12	5.4		1c	0	NW		0	0	Clear	
Augusta, Georgia	30.07	763.8	30.26	768.6	48	8.9	92	Calm	0	0		0	Sm'e		Calm	0	0	Smoky	
Baltimore, Maryland	30.22	767.6	30.27	768.8	47	8.3	69	NW	6	2.7		2ck	2s	Calm	NW	0	0	Fair	
Barnegat, New Jersey	30.15	765.8	30.17	766.3	51	10.6	72	NW	19	8.5		2c	0	NW		0	0	Fair	
Bismarck, Dakota	28.18	715.8	29.89	759.2	33	0.6	69	Calm	0	0			10s		W	0	0	Cloudy	
Boise City, Idaho	27.00	685.8	29.64	752.8	34	1.1	79	Calm	0	0		2k	0	Calm		0	0	Fair	
Boston, Massachusetts	29.91	759.7	30.06	763.5	46	7.8	69	NW	12	5.4		1cs	0	Calm		0.01	0.3	Clear	
Brackettville, Texas	28.70	729.0	29.69	754.1	72	22.2	76	SE	4	1.8			10ks		SE	0	0	Cloudy	
Breckenridge, Minnesota	28.90	734.0	29.90	759.4	45	7.2	92	N	14	6.3			10s		Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	29.83	757.7	29.89	759.2	77	25.0	76	SE	4	1.8		8c	0	Calm		0	0	Cloudy	
Buffalo, New York	29.50	749.3	30.22	767.6	45	7.2	92	NE	1	0.4		2ck	Sm'e	Calm	Calm	0	0	Fair	
Burlington, Vermont	29.96	761.0	30.22	767.6	43	6.1	100	N	5	2.2			10n		Calm	0.53	13.5	Light rain	
Cairo, Illinois	29.73	755.1	30.12	765.0	58	14.4	69	SE	6	2.7		5ck	0	N		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona																			
Campo, California	27.34	694.4	29.91	759.7	52	11.1	73	SW	6	2.7			10s		W	0	0	Cloudy	
Cape Hatteras, N. Carolina	30.18	766.6	30.19	766.8	59	15.0	64	W	6	2.7		0	0			0	0	Clear	
Cape Henry, Virginia	30.20	767.1	30.23	767.8	59	15.0	64	N	6	2.7		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.24	768.1	30.26	768.6	60	15.6	76	N	7	3.1		1k	0	NE		0	0	Fair	
Cape May, New Jersey	30.18	766.6	30.21	767.3	53	11.7	68	NW	24	10.7		5ck	0	W		0	0	Fair	
Charleston, South Carolina	30.20	767.1	30.26	768.6	59	15.0	70	N	5	2.2		0	Sm'e		Calm	0	0	Clear	
Cheyenne, Wyoming	23.85	605.8	29.79	756.7	41	5.0	91	NE	8	3.6			10n		Calm	1.01	25.7	Light rain	
Chicago, Illinois	29.26	743.2	29.95	760.7	53	11.7	79	S	12	5.4		5k	Fog	SW	Calm	0.33	8.4	Fair	
Cincinnati, Ohio	29.47	748.5	30.11	764.8	54	12.2	67	SE	3	1.3		10cs	Fog	W	Calm	0	0	Cloudy	
Cleveland, Ohio	29.48	748.8	30.22	767.6	45	7.2	92	E	10	4.5			10s		E	0.04	1.0	Threatening	
Concho, Texas					68	20.0	74	SE	20	8.9			8s		SE	0	0	Cloudy	
Corsicana, Texas	29.47	748.5	29.93	760.2	65	18.3	94	SE	6	2.7		2cs	2s	Calm	Calm	0	0	Fair	
Davenport, Iowa	29.26	743.2	29.88	758.9	60	15.6	88	SW	7	3.1		4k	0	W		0.35	8.9	Fair	
Denison, Texas	29.17	740.9	29.95	760.7	67	19.4	90	S	7	3.1			10s		S	0	0	Threatening	
Denver, Colorado	24.56	623.8	29.78	756.4	46	7.8	76	N	8	3.6			10s		Calm	0.10	2.5	Cloudy	
Detroit, Michigan	29.43	747.5	30.10	764.5	51	10.6	86	SE	4	1.8			10s		SE	0.22	5.6	Cloudy	
Dodge City, Kansas	27.10	688.3	29.28	743.7	61	16.1	82	S	14	6.3			10s		SW	0.01	0.3	Cloudy	
Dubuque, Iowa	29.16	740.7	29.85	758.2	56	13.3	87	S	3	1.3			10s		Calm	0.82	20.8	Cloudy	
Duluth, Minnesota	29.21	741.9	29.89	759.2	47	8.3	92	Calm	0	0			10s		Calm	0.06	1.5	Cloudy	
Eagle Pass, Texas	29.07	738.4	29.78	756.4	70	21.1	75	SE	3	1.3			10s		S	0	0	Cloudy	
Eastport, Maine	29.82	757.4	29.89	759.2	47	8.3	92	N	18	8.0			10s		N	0.07	1.8	Cloudy	
Erie, Pennsylvania	29.48	748.8	30.21	767.3	47	8.3	77	S	12	5.4		5cs	0			0	0	Fair	
Escanaba, Michigan	29.29	744.0	29.94	760.5	51	10.6	86	S	10	4.5			10s		S	0.05	1.3	Cloudy	
Florence, Arizona	28.19	716.0	29.79	756.7	65	18.3	80	SW				0	0			0	0	Clear	
Fort Bayard, New Mexico	23.88	606.5	29.88	758.9	46	7.8	33	SW	4	1.8		0	5s		SW	0	0	Clear	
Fort Craig, New Mexico	25.30	642.6			54	12.2	32	E	2	0.9			10ks		E	0	0	Cloudy	
Fort Gibson, Indian Ter.	29.37	746.0	29.89	759.2	66	18.9	84	SE	11	4.9		0	8s		SW	Inap.	Inap.	Fair	
Fort Griffin, Texas	28.61	726.7	29.83	757.7	69	20.6	90	SE	4	1.8			10s		Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.62	726.9	29.69	754.1	67	19.4	79	SE	14	6.3			10s		SW	Inap.	Inap.	Cloudy	
Fort Sully, Dakota	28.27	718.0	29.94	760.5	43	6.1	100	SE	2	0.9			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.91	759.7	29.95	760.7	76	24.4	81	SE	8	3.6		10cs	1ks	W	SE	0	0	Cloudy	
Grand Haven, Michigan	29.32	744.7	29.97	761.2	53	11.7	82	SE	9	4.0			10s		SW	0.02	0.5	Cloudy	
Indianapolis, Indiana	29.32	744.7	30.10	764.5	55	12.8	62	SE	8	3.6		10cs;ck	0	Calm		0.01	0.3	Fair	
Indianola, Texas	29.90	759.4	29.93	760.2	77	25.0	76	SE	11	4.9		0	8ks		S	0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.16	766.1	30.18	766.6	64	17.8	78	NE	3	1.3		0	0			0	0	Clear	
Keokuk, Iowa	29.25	742.9	29.84	757.9	64	17.8	78	S	11	4.9		0	8s		S	0.11	2.8	Fair	
Key West, Florida	29.96	761.0	29.99	761.7	77.0	25.0	86	E	10	4.5			10s		E	0.15	3.8	Cloudy	
Kittyhawk, North Carolina	30.23	767.8	30.25	768.3	56	13.3	74	NW	12	5.4		0	0			0	0	Clear	
Knoxville, Tennessee	29.26	743.2	30.30	769.6	44	6.7	83	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.11	739.4	29.83	757.7	51	10.6	100	Calm	0	0			10n		Calm	0.68	17.3	Light rain	
La Mesilla, New Mexico	25.87	657.1	30.02	762.5	45	7.2	61	SW	1	0.4		0	0			0.06	1.5	Clear	
Laredo, Texas					76	24.4	76	SE	6	2.7		10k	0	S		0	0	Cloudy	
Leavenworth, Kansas	28.96	735.6	29.76	755.9	64	17.8	83	S	8	3.6		2ck	5k	Calm	S	0.02	0.5	Cloudy	
Los Angeles, California	29.56	750.8	29.87	759.2	54	12.2	79	NE	2	0.9		0	0			0	0	Clear	
Louisville, Kentucky	29.59	751.6	30.16	766.1	54	12.2	73	SE	5	2.2		8c	Fog	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.58	751.3	30.28	769.1	50	10.0	71	NW	1	0.4		0	Haze		Calm	0	0	Hazy	
Maricopa Wells, Arizona					58	14.4	53	NE				0	0			0	0	Clear	
Marquette, Michigan	29.20	741.7	29.99	759.4	50	10.0	71	SE	4	1.8			10s		Calm	0	0	Cloudy	
Mason, Texas	28.24	717.3	29.93	760.2	70	21.1	71	SE	12	5.4		2c	2s	Calm	S	0	0	Fair	
Memphis, Tennessee	29.81	757.2	30.13	765.3	56	13.3	81	SE	2	0.9		5c	Fog	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.28	743.7	29.96	761.0	49	9.4	93	SE	6	2.7		5ck	5s	SW	SW	0.15	3.8	Cloudy	
Mobile, Alabama	30.09	764.3	30.13	765.3	57	13.9	81	N	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	29.96	761.0	30.20	767.1	53.5	11.9	76	E	2	0.9		0	Sm'e		Calm	0	0	Clear	
Morgantown, West Virginia	29.19	741.4	30.26	768.6	47	8.3	77	Calm	0	0			10s		W	0	0	Cloudy	
Mt. Washington, N. H.	23.78	604.0	30.14	765.5	28	—2.2	88	N	18	8.0		2c	Fog	Calm	N	0.78	19.8	Fair	
Nashville, Tennessee	29.66	753.4	30.21	767.3	49	9.4	85	Calm	0	0		2cs	0	SW		0	0	Clear	
New Haven, Connecticut	30.00	762.0	30.12	765.0	53	11.7	73	NW	5	2.2		Haze	0			0	0	Clear	
New London, Connecticut	30.05	763.3	30.10	764.5	51	10.6	65	NW	6	2.7		0	0			0	0	Clear	
New Orleans, Louisiana	30.01	762.2	30.07	763.8	67	19.4	87	E	8	3.6		0	0			0	0	Clear	
Newport, Rhode Island	30.03	762.7	30.08	764.0	49	9.4	71	NW	15	6.7		0	0			0	0	Clear	
New York, New York	30.00	762.0	30.18	766.6	52	11.1	66	W	18	8.0		2k	5ks	NW	NW	0	0	Cloudy	
Norfolk, Virginia	30.21	767.3	30.27	768.8	52	11.1	79	N	7	3.1		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	26.89	683.0	29.42	747.3	47	8.3	85	NE	20	8.9			10s		Calm	0	0	Cloudy	
Olympia, Washington Ter.	29.88	758.9	29.92	760.0	47	8.3	85	Calm	0	0		0	5s		Calm	0.03	0.8	Fair	
Omaha, Nebraska	28.62	726.9	29.66	753.4	55	12.8	93	N	1	0.4			10n		SW	Inap.	Inap.	Light rain	
Oswego, New York	29.91	759.7	30.24	768.1	51	10.6	75	NW	8	3.6			10s		NW	0	0	Cloudy	
Pembina, Dakota	29.12	739.6	29.98	761.5	30	—1.1	94	NW	1	0.4		0	Fog		Calm	0.06	1.5	Clear	
Philadelphia, Pennsylvania	30.17	766.3	30.22	767.6	59	10.0	64	NW	13	5.8		5c	0	N		0	0	Fair	
Phœnix, Arizona					54	12.2	37	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.59	446.8	29.80	756.9	14	—10.0	61	SW	6	2.7			10s		SW	0.03	0.8	Cloudy	
Pioche, Nevada	23.85	605.8	29.62	752.3	39	3.9	82	N	1	0.4		0	8s		Calm	0.04	1.0	Cloudy	
Pittsburg, Pennsylvania	29.42	747.3	30.26	768.6	43	6.1	91	E	3	1.3		10k	Fog	N	Calm	0	0	Cloudy	
Port Huron, Michigan	29.46	748.3	30.13	765.3	47	8.3	85	SE	7	3.1			10ks		SE	0.18	4.6	Cloudy	
Portland, Maine	29.99	761.7	30.04	763.0	49	9.4	71	NW	11	4.9		10k	Haze	N		0.20	5.1	Cloudy	
Portland, Oregon	29.88	758.9	29.98	761.5	50	10.0	86	N	2	0.9			10n		Calm	0.01	0.3	Light rain	
Prescott, Arizona	24.60	624.8	29.96	761.0	54	12.2	35	Calm				0	Sm'e		Calm	0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.03	762.7	73	22.8	76	NE	16	7.2		8cs	0	NE		0	0	Cloudy	
Red Bluff, California	29.53	750.0	29.88	758.9	58	14.4	64	S	6	2.7			10s		Calm	0	0	Cloudy	
Rochester, New York	29.60	751.8	30.23	767.8	48	8.9	77	W	6	2.7			10s		W	Inap.	Inap.	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.37	746.0	29.93	760.2	49.5	9.7	100	Calm	0	0	.....	10n	Fog	Calm	Calm	0.18	4.6	Light rain	
Sacramento, California	29.80	756.9	29.89	759.2	54	12.2	79	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.99	761.7	63	17.2	78	S	12	5.4	.....	5c	2s	Calm	Calm	Inap.	Inap.	Fair	
St. Marks, Florida	30.14	765.5	30.16	766.1	62	16.7	83	E	7	3.1	.....	5c	0	W	.....	0	0	Fair	
St. Paul, Minnesota	29.00	736.6	29.82	757.4	48	8.9	93	NE	4	1.8	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.43	645.9	29.76	755.9	46	7.8	92	NW	8	3.6	.....	.....	10n	.....	Calm	0.45	11.4	Light rain	
San Antonio, Texas	29.10	741.4	29.75	755.6	73	22.8	80	SE	4	1.8	.....	0	8ks	.....	SE	0	0	Cloudy	
San Diego, California	29.86	758.4	29.93	760.2	62	16.7	77	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.48	748.8	30.17	766.3	51	10.6	86	S	10	4.5	.....	.....	10s	.....	W	0.07	1.8	Cloudy	
Sandy Hook, New Jersey	30.12	765.0	30.45	765.8	54	12.2	73	NW	31	13.9	.....	2ck	2ks	SE	NW	0	0	Fair	
San Francisco, California	29.86	758.4	29.93	760.2	55	12.8	93	SW	6	2.7	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Santa Fé, New Mexico	23.06	586.7	29.60	751.8	44	6.7	30	SE	3	1.3	.....	Haze	8s	.....	SW	0	0	Fair	
Savannah, Georgia	30.15	765.8	30.24	768.1	58	14.4	81	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.81	757.2	30.03	762.7	62	16.7	88	SE	2	0.9	.....	0	10s	.....	Calm	0	0	Cloudy	
Smithville, North Carolina	30.23	767.8	30.27	768.8	55	12.8	73	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.93	760.2	30.06	763.5	50	10.0	64	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Stanwix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton, Texas	26.76	679.7	29.76	755.9	62	16.7	88	SE	12	5.4	.....	0	8s	.....	SE	0	0	Fair	
Thatcher's Island, Mass	30.00	762.0	30.05	763.3	48	8.9	77	NW	24	10.7	.....	1k	0	NW	.....	0	0	Clear	
Toledo, Ohio	29.43	747.5	30.11	764.8	52	11.1	79	S	8	3.6	.....	.....	10s	.....	NW	0.04	1.0	Clearing	
Tucson, Arizona	27.44	697.0	29.99	761.7	61	16.1	66	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.10	764.8	30.22	767.6	66	18.9	73	NE	12	5.4	.....	1c	0	Calm	.....	0	0	Clear	
Umatilla, Oregon	29.61	752.1	.....	.....	39	3.9	91	SE	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Vicksburg, Mississippi	29.85	758.2	30.11	764.8	57	13.9	87	SE	11	4.9	.....	5c	0	W	.....	0	0	Fair	
Virginia City, Montana	24.11	612.4	29.59	751.6	38	3.3	80	NE	12	5.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Visalia, California	29.55	750.6	29.93	760.2	47	8.3	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.18	766.6	30.30	769.6	44	6.7	79	NW	6	2.7	.....	2ck	1s	NW	NW	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	39	3.9	.....	SW	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.18	766.6	30.26	768.6	55	12.8	73	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.49	647.4	29.85	758.2	20	— 1.7	59	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Wood's Holl, Mass	30.02	762.5	30.07	763.8	52	11.1	66	NW	14	6.3	.....	0	2s	.....	NW	0	0	Fair	
Yankton, Dakota	28.54	724.9	29.81	757.2	48	8.9	92	N	11	4.9	.....	.....	Fog	.....	Calm	0	0	Cloudy	
Yuma, Arizona	29.63	752.6	29.79	756.7	61	16.1	44	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.67	753.6	29.72	754.9	33.5	0.8	95	S	10	4.5	.....	3k	0	W	.....	Inap.	Inap.	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.89	759.2	29.91	759.7	80	26.7	86	SE	3.6	1.6	.....	2k	4ks	E	.....	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	81	27.2	78	Calm	0	0	.....	2c	2s	NE	.....	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	84.5	29.2	.....	NE	.....	.....	2	.....	.....	.....	.....	0	0	Clear	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	90	32.2	76	Calm	.....	.....	.....	2c	2ks	E	.....	Blank	Blank	Fair	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.80	756.9	29.82	757.4	82	27.8	87	E	.....	.....	.....	0	5ks	.....	E	.....	.....	Hazy	L. Y. Bigard.
Paramaribo, D. Guiana, S. A.	.....	.....	29.99	761.7	82	27.8	83	E	.....	.....	2	0	5k	.....	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	66.8	19.3	87	Calm	.....	.....	0	.....	10s	.....	.....	0.65	16.5	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.91	759.7	57	13.9	55	12.8	87	W	10	4.5			10		W	0	0				
Navy Yard, Pensacola, Fla.	30.24	768.1			65	18.3	68	NNE	12	5.4			2			0	0			D clouds	
Navy Yard, Portsmouth, N.H	30.12	765.0	69	20.6	46	7.8	84	WNW			1					0	0			Bright	
Naval Hospital, Yokohama, Japan	29.88	758.9	66	18.9	59	15.0	88	Calm			0		Haze		Calm	0	0			Fair	
Adams, Indio Pt. Light, Buenos Ayres	29.84	757.9	70	21.1	57	13.9	87	NW			1		2		NE	0	0	None		D. clouds	
Alert, Vladivostok	30.12†	765.0†	52	11.1	52	11.1	60	NW			4–6		10		NW					Squally	
Alliance, Constantinople, Turkey	30.31	769.9	64	17.8	60	15.6	65	NNE			3–4		7		NNE					Pleasant	
Ashuelot, Tientsin, China	30.36	771.1	66	18.9	53	11.7	67	ESE			1		8		Calm					D. clouds	
Canonicus, New Orleans, La	30.06	763.5	51	10.6	66	18.9	94	E			2		2							Clear	
Colorado, New York, N. Y.	30.23	767.8	62	16.7	55	12.8	68	WNW	21	9.4			7		NNW	0	0			Cloudy	
Despatch, Constantinople, Turkey	30.36	771.1	91	32.8	60	15.6	87	NNE			3		7		NE					Cloudy	
Franklin, Norfolk, Va.	30.31	769.9	54	12.2	56	13.3	100	N	7	3.1			9		N	0	0				
Frolic, N. 22° 49′, W. 67° 03′	30.17	766.3	83	28.3	86	30.0	92	ENE			3		7ck		Calm	Heavy	Heavy	Moderate.	S&E	D. clouds	
Gettysburg, Naples, Italy	30.05‡	763.3‡			73	22.8	85	Calm			0		1		Calm	0	0			D. clouds	
Kearsarge, Pt. de Galle, Ceylon	29.97	761.2			81	27.2	100	ESE			2		9		S	0.15	3.8	Long	S&E	D. clouds	
Lackawana, Esquimault, B. C.	29.92	760.0			51	10.6	86	Calm			0		10							D. clouds	
Marion, Smyrna, Turkey	30.31	769.9	69	20.6	69	20.6	43	N			4		4		Calm	0	0	Smooth		D. clouds	
Michigan, Chicago, Ill.	29.46	748.3	60	15.6	53	11.7	86	S			3		5		SE					Squally	
Monocacy, N. 38° 10′, E. 141° 35′	29.89	759.2	65	18.3	65	18.3	58	W			5		4		NW	Heavy	Heavy	Moderate.	S&E	D. clouds	
Monongahela, N. 36° 30′, W. 41° 18′	30.16	766.1	70	21.1	70	21.1	66	NE			3		k					Long	N&E	D. clouds	
New Hampshire, Port Royal, S. C.	30.38	771.6			62	16.7	79	NE	11	4.9			1		NE	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.05	763.3	61	16.1	55	12.8	87	NW	7	3.1			10		NW	0.07	1.8	Moderate.	N	Rainy	
Onward, Callao, Peru	30.08†	764.0†	70	21.1	69	20.6	95	SE			1		10					Long	W	Overcast	
Ossinee, Boston, Mass.	30.13	765.3	72	22.2	48	8.9	78	NNW			3		0							Blue sky	
Palos, Shanghai, China	30.35	770.9	63	17.2	59	15.0	70	ESE			0–1		0			0	0			Clear	
Pensacola, Mare Island, Cal.	29.98	761.5			59	15.0	94	SW			1		10			0	0			Overcast	
Plymouth, Norfolk, Va.	30.54	775.7	62	16.7	58	14.4	82	NNW			1		0							Clear	
Ranger, N. 32° 6′, E. 128° 0′	30.40	772.1			64	17.8	78	NW			3		1		NW	0	0	Light	NW	Pleasant	
Rio Bravo, Brownsville, Texas	29.78	756.4			76	24.4	91	SSE			1		1		E					D. clouds	
Santee, Annapolis, Md.	30.31	769.9	57	13.9	49	9.4	78	NW			2		6		N&W	0	0			Clear	
St. Louis, League Island, Pa	30.14	765.5	57	13.9	56	13.3	87	NW	15	6.7			4		NW	0	0			Fair	
Tennessee, Yokohama, Japan	29.86	758.4	66	18.9	62	16.7	88	WNW	6	2.7			0			0	0	Smooth		Hazy	
Trenton, Marseilles, France	30.30	769.6	70	21.1	68	20.0	70	SW	9	4.0			6		S&W	0	0			D. clouds	
Vandalia, N. 39° 05′, E. 15° 03′	30.34	770.6	71	21.7	71	21.7	57	NE			1		2		N			Long smooth	NE	D. clouds	
Wabash, Boston, Mass.	30.07	763.8	49	9.4	49	9.4	71	NW	10	4.5			1		NW	0.02	0.5			D. clouds	
Wyoming, Washington, D. C.	30.70†	779.8†	57	13.9	52	11.1		N&W			0–1		7							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from: they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 22° 48′, E. 116° 43′			30.27*	768.8*	74	23.3	76	NE			3		2		NE	Moderate.	NE	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 23′, W. 148° 52′			30.45†	773.4†	81	27.2		S			4		9		SSE	Smooth	SSW	Cloudy	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation: not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 36° 54′, E. 144° 18′			30.08*	764.0*	65	18.3	??	NNW			5		k		NW	Long	NW	D clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 29° 59′, E. 169° 56′			29.95	760.7	72	22.2	90	Var.			1–2		5		Calm	Moderate	N	D clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.63*	752.6*	60	15.6		WSW			5		4		NW				Captain Sargent.
S. S. Ohio, N. 51° 46′, W. 22° 32′			29.46	748.3	52	11.1	93	N			6				N	L rge	SW	Stormy	Captain Morrison.
S. S. Pennsylvania, N 40° 25′ W. 65° 32′			29.90†	759.4†	61	16.1	94	WNW			6		7		WNW	Large	N&NW	Squally	Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 32° 26′, W. 80° 02′			30.23	767.8	70	21.1	57	NE	6	2.7		0	Sm'e			Smooth		Smoky	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

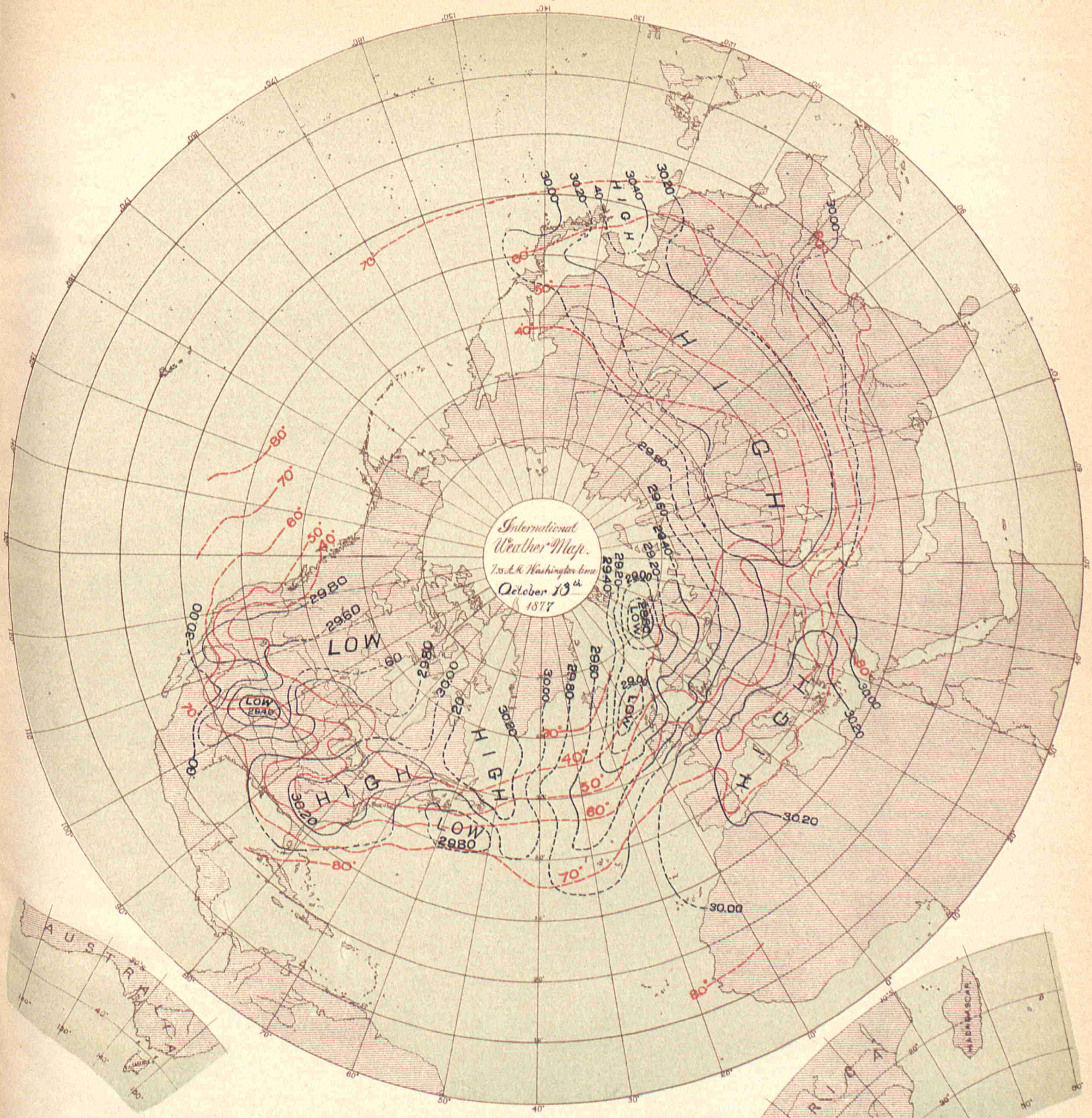
NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combination in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 14, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.25	768.3	73.9	23.3	58	NW			1		1			0	0	Very fair	Michel.
Algiers			30.19	766.9	77.0	25.0	44	Calm			0		0			0	0	Clear	Peter.
La Calle			30.27	768.9	79.5	26.4	45	SE			2		1			0	0	Very fair	Fleury.
Tunis			30.38	771.6	75.9	24.4	49	E			3		0			0	0	Clear	Jacques.
Sfax													0					Clear	Husson.
Saida			30.24	768.2	77.5	25.3	26	S			5		1			0	0	Very fair	Millot.
Tebessa			30.27	768.9				SSE			1		0			0	0	Clear	Bourgeois.
Geriville			30.24	768.0	66.2	19.0	39	ESE			3		1			0	0	Very fair	Lemaillot.
Laghouat			30.30	769.5	68.0	20.0	32	W			2		0			0	0	Clear	François.
Biskra			30.40	772.1	78.4	25.8	14	NW			2		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.90	759.5	30.37	771.3	64.4	18.0	46	SW			2		3			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.50	749.3	30.26	768.7	62.6	17.0	59	WSW			1		2			0	0		Dr. Wierzbiski.
Eperies	29.43	747.6	30.32	770.1	55.2	12.9	69	SE			2		3cs			0	0		Julius Mikolik.
Gratz	29.09	738.8	30.35	770.8	57.6	14.2	78	SE			2		0			0	0		Andreas Rospini.
Hermannstadt	29.00	736.5	30.42	772.6	59.0	15.0	48	SE			1		5			0	0		Prof. Reissenberger.
Kremsmünster	28.87	733.3	30.21	767.2	58.3	14.6	68	E			1		1			0	0		Prof. C. Wagner.
Lemberg	29.26	743.2	30.26	768.5	54.5	12.5	70	W			2		3			0	0		Dr. T. Stanecki.
Pola	30.37	771.5	30.49	774.4	63.3	17.4	67	S			1		4cs			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	30.11	764.7	30.39	771.8	61.5	16.4	61	S			1		4			0	0		Karl Stancel.
Trieste	30.41	772.5	30.52	775.1	61.2	16.2	83	NW			1		0			0	0	Clear.	P. Busin.
Vienna	29.59	751.5	30.27	768.9	66.0	18.9	59	SE			1		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.63	727.1	30.11	764.9	62.1	16.7	52	S			2		0			0	0		Royal Observatory.
Brussels	29.79	756.6	29.99	761.7	63.0	17.2	56	SSW			2	1				0	0		
Furnes	29.92	759.9	29.94	760.5	64.9	18.3	61	S			4		3			0	0		
Maeseyck	29.85	758.2	30.02	762.5	64.9	18.3	62	S			6		2			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.20	741.7	29.30	744.2	54.0	12.2		SSE	15	6.7			9			0.230	5.84	Drizzling	W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			29.23	742.4	59.3	15.2		S	28	12.5									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.51	749.5	63.8	17.7		S	27	12.1			8					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.23	742.4	60.5	15.8		SSW			3–4		10					D. clouds	J. Dreyer.
Bradford, Yorkshire																0.02	0.5		J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	87	30.6		NE			2		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29.73	755.1	69.0	20.6		S			2		9					Overcast	H. Todd.
Cardington			29.72	754.9	67.6	19.8		SW			4		2					Blue sky	John McLaren.
Chatham, School M. E.	29.68	753.9	29.81	757.2	64.2	17.9		SW			4		2					Fine	Lt. W. G. Morris, R. E.
Dartmoor	28.20	716.3	29.63	752.6	62.0	16.7		SW			6		6					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.24	742.7	29.27	743.4	60	15.6		SSW			6		10					Overcast	J. Mac Gowan.
Dover	29.84	757.9	29.86	758.4	60	15.6		SW			3		2					¼ clouded	J. Costello.
Eccles, (near Manchester)			29.56	750.8	62.6	17.0		SSW	9.8	4.4			10					Squally	Thomas Mackereth.
Falmouth, Observatory	29.37	746.0	29.59	751.6	62.0	16.7		SSE			5		2					D. clouds	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.80	756.9	87.7	31.0		E			3		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.91	759.7	82	27.8		W			1		4					D. clouds	
Galway, Queen's College					57	13.9		WNW			6		7					Gloomy	G. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.14	765.5	30.18	766.6	67.8	19.9		E			6		9					Overcast	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.09	738.9	29.29	744.0	57.2	14.0		SSE			8		10					Raining	D. G. Maclean.
Great Yarmouth	29.78	756.4	29.79	756.7	61	16.1		S			5		3					Squally	G. T. Watson.
Greenwich, Royal Obs'y	29.62	752.3	29.78	756.4	67.0	19.4		SW			3		1					Blue sky	The Staff, for G. B. Airy.
Guernsey	29.53	750.0	29.75	755.6	62.5	16.9		SE			4		5					Squally	Dr. S. E. Hoskins, F. R. S.
Helston			29.64	752.8	65	18.3		SW			8		2k			0.27	6.9	D. clouds	M. P. Moyle.
Holyhead	29.38	746.2	29.42	747.3	61	16.1		SSW			6		10					Misty	John Tilston.
Jersey	29.53	750.0	29.82	757.4	65.0	18.3		S			6		6					D. clouds	J. Fisher.
Kew, Observatory			29.78	756.4	65.0	18.3		S	22	9.8			2					D. clouds	The Staff.
Kingstown	29.31	744.5	29.34	745.2	63	17.2		S			5		9					Overcast	George Mitchell.
Leicester, Museum			29.67	753.6	63.1	17.3		S			6		5					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.33	770.4	30.40	772.1	68.6	20.3		NE			1		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	29.16	740.7	29.25	742.9	44	6.7		NE			6		10					Raining	W. D. Penny.
Nassau, (Bahamas)			30.04	763.0	76.0	24.4		NE			2		10			Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	29.46	748.3	29.65	753.1	68.8	20.4		S			6		5c;k		SW; SSW	0.002	0.05	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.10	739.1	29.60	751.8	66.5	19.2		S			6		8					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.71	754.6	65	18.3		S			2		7					D. clouds	F. Lucas
Plymouth	29.58	751.3	29.65	753.1	64.5	18.1		SW			5		7					D. clouds	John Merrifield.
Roche's Point	29.25	742.9	29.29	744.0															W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			29.36	745.7	46	7.8		N	6	2.7			10					Drizzling	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.44	747.8	63.8	17.7		NNE			2		4					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.35	745.5	29.60	751.8	64.5	18.1		SW			6		6			0.04	1.0	D. clouds	W. F. Cooper.
Silloth Rectory	29.38	746.2	29.41	747.0	62.1	16.7	71	SW			7		7			0.280	7.11	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					59.3	15.2		S			4		10					Threatening	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.25	742.9	43	6.1		ENE			6		10					Raining	John Smith.
Stratfield Turgiss	29.50	749.3	29.74	755.4	66.7	19.3		SW			1		0					Blue sky	Rev. C. H. Griffith, F. M. S.
Thurso			29.33	745.0	43	6.1		Calm			0		10					Raining	John Trotter.
Truro, Royal Institution			29.58	751.3	65	18.3		S			8		4					D. clouds	W. Newcombe.
Valencia, Observatory			29.05	737.9	59.7	15.4		S	51	22.8			10					Raining	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		S			7		10			0.10	2.5		Henry Mercer.
Cape Good Hope, Obs'y	30.04	763.0	30.08	764.0	77.8	25.4	53	SSE	7	3.1		0	2						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.34	745.2	44.0	6.7	81	NW			5		10n			0.40	10.2	Raining	Francis Abbott, F. R. A. S.
Leith, Restalrig Park			29.32	744.7	62.3	16.8		W			6		9k			0.01	0.3	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.99	761.7	30.18	766.6	73.1	22.8	71	E	15.7	7.0		2	7	WSW	E	0.03	0.8	Cloudy	C. Meldrum.
Melbourne, Observatory	29.95	760.7	30.04	763.0	47.8	8.8	74	WNW	8	3.6			2		NW	0.26	6.6	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.02	737.1	38	3.3		NE			8		10			0.3	8.		J. Youngclause.
North Unst, (Shetland Is.)			29.19	741.4	46	7.8		SW			6	7	6	SW		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria, N. 42° 30′, W. 49° 42′			29.52	749.8	64	17.8		WSW			2		10			16*	NE; SE; S	Raining	Capt. W. Watson.
S. S. Batavia, S. 42° 25′, W. 66° 25′			30.19	766.8	49	9.4		NNE			4		8			5	NNE	D clouds	Capt. J. E. Moulund.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 40° 40′, W. 62° 40′			29.98	761.5	58	14.4		NNW			6		8			6	NE	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 6′			30.03	762.7	47	8.3		NW			6		10			7	NW	Hailing	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 47° 25′, W. 28° 35′			30.05	763.3	53	11.7		WNW			6		8			6	NNW	Showery	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5			69.8	21.0	95	S			1	1ck	2ks	SE	SE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.78	756.5	29.83	757.7	56.3	13.5	75	SW			4		8						
Fanöe	29.76	756.0	29.78	756.5	55.6	13.1	88	WSW			6		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.74	755.5	29.79	756.6	27.5	— 2.5	98	NE			8		8						
Thorshavn, (Faröe)	29.15	740.4	29.19	741.3	43.3	6.3	81	N			4		8						
Vestervig	29.50	749.3	29.67	753 0	54.3	12.4	79	SW			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.45	747.9	30.00	761.9	59.0	15	55	SW			1				SW	0	0		Collignon, Director.
Amiens, Normal School	29.85	758.1	29.96	760.9	60.1	15.6	64	SW			2		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	30.29	769.4	30.37	771.4	70.3	21.3	51	S			3		2n		SE	0	0		Mr. Giraud, Director.
Bar-sur-Seine	29.57	751.0	30.12	765.0	68.7	20.4	39	S			1		0			6	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	29.72	755.0	29.88	759.0	77.5	25.3	27	S	19.2	8.6					SW	0	0		Albert Cheux.
Beauvais	29.70	754.4	29.98	761.5	63.1	17.3	52	S			3		0			0	0	Clear	Normal School.
Besançon	29.33	744.9	30.21	767.2	65.1	18.4	53	SW			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.41	747.1	30.34	770.7	56.7	13.7	93	S			8		0			0	0	Clear	Normal School.
Bourges, Normal School	29.50	749.4	30.05	763.2	68.0	20	46	SSE			4		0			0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.43	747.4	29.64	752.9	67 5	19.7	80	S			5		8		S	0	0	Stormy	The Staff.
Carcassonne, Normal School	29.81	757.2	30.23	767.8	62.2	16.8	73	E			8		5		E	0	0	Cloudy	Vateau, Director.
Caen	29.78	756.3	29.85	758.1	68.7	20.4	47	N			6		1		N	0	0	Clear	Normal School.
Chartres, Normal School	29.38	746.3	29.93	760.1	73.0	22.8	73	SSW			6		0			0	0	Clear	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.76	755.8	30.07	763.6	71.2	21.8	54	S			3		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28 78	731.1	30.10	764.4	72.0	22.2	28	SE			3		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.30	744.1	30.17	766.3	61.3	16.3	64	S			2		0			0	0	Very clear.	Dr. Goulet, Director.
Commune de Gréasque*	29.30	744.1	30.44	773.1	69.1	20.6	44	S			1		0			0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.69	754.2	29.90	759.4	74.8	23.8	64	S			8		0			0	0	Clear	Moullot, Director.
Le Mans, Normal School	29.65	753.1	29.95	760.7	68.4	20.2	51	SSW			4		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.27	743.4	30.17	766.3	64.6	18.1	51	SSW			6		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	29.72	754.8	29.82	757.3	62.6	17.0	81	SSE			4		8		S	0.012	0.3	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.53	750.1	30.21	767.4	64.8	18.2	69	SSE			6		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.19	741.4	30.23	767.8	58.6	14.8	70	S			2		1		S	0	0	Clear	Normal School
Nismes, Normal School	30.18	766.6	30.38	771.7	61.7	16.5	74	S			4		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.69	754.1	30.07	763.6	69.1	20.6	37	E			4		0			0	0	Clear	Bernard, Director.
Paris, Observatory	29.76	756.0	30.00	761.9	70.0	21.1	34	S			2		0			0	0	Clear	National Observatory.
Privas	29.28	743.7	30.35	770.8	59.0	15	57	S			2		10		S	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.92	760.0	29.95	760.8	74.1	23.4	55	SE			5		0			0.20	5.	Clear	Lt. Decante, Director.
Rouen, Normal School	29.84	757.9	29.93	760.1	70.9	21.6	46	SSE			2		0			0	0	Clear.	F. Lucard, Director.
Tarbes, Normal School	28.98	736.2	30.02	762.4	79.2	26.2	22	N			1		0			0	0	Clear.	T. Hugues, Director.
Villefranche	29.49	749.0	30.19	766.7	70.0	21.1	69	SSE			6		0			0	0	Clear.	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.1	29.80	756.8	82.4	28										0.08	2.		L'Abbé Marchési.
Marseilles, Observatory			30.39	772.0	65.8	18.8	63	E			3		5			0	0	Partly cl'dy	The Staff.
Mont-Louis	25.12	638.0	30.43	773.0	59.0	15.0	25	SSW	24.2	10.83			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.72	754.8	29.99	761.8	74.1	23.4	30	S			2-3		0			0	0	Clear	Marié Davy, Director.
Perpignan			30.26	768.5	65.5	18.6	70	SE	20.5	9.17			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.44	544.6			52.5	11.4		SE			4		0					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.73	577.4			57.7	14.4		SE			3-4		0			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.84	757.9	30.00	762.1	72.3	22.4	34	S			2		0			0	0	Clear.	E. Renou.
Toulouse, Observatory	29.41	747.1	30.14	765.5	66.6	19.2	58	SSE			8		0			0	0		The Staff.
Tours	29.80	756.8	29.99	761.8	73.9	23.3	37	S			6		0			0	0	Clear.	C. Marquet.
Versailles, (near Paris)			30.01	762.3	71.2	21.8	37	SW			4		0			0	0	Clear	Dr. A. Berigny.
Zi-Ka-Wei, (near Shanghai)	30.12	765.1	30.15	765.8	59.7	15.4	80	E	7.4	3.3		7c		W		0	0	Lunar corona	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.3 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 6:50, instead of 6:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.90	759.4	30.07	763.8	61.9	16.6	58	S			1		4			0.067	1.68		Prof. Arndt.
Breslau	29.68	753.8	30.21	767.4	65.5	18.6	53	SSW			3		1			0.037	0.95		Royal University Obs'y.
Carlsruhe	29.74	755.4	30.17	766.2	63.0	17.2	65	S			1		0			0	0	Light fog	Albert Senz.
Cassel	29.58	751.2	30.19	766.7	61.5	16.4	60	SW			5		2	W		0	0		Dr. H. Möhl.
Crefeld	29.87	758.6	30.03	762.7	68.0	20.0	48	SW			5		3cs;s			0.04	1.		Director Lose.
Emden	29.91	759.7	29.95	760.6	59.4	15.2	74	SW			2		0			0.295	7.5		Prof. Prestel.
Frankfort on the Main	29.82	757.5	30.18	766.6	63.5	17.5	45	SSW			2		0			0	0		Physical Society.
Friedrichshafen	28.83	732.2	30.28	769.0	51.8	11.0	76	SSW			2		0			0	0		M. Wilhelm.
Hamburg	29.91	759.6	29.98	761.4	59.0	15.0	72	WSW			4		3cs	W		0.091	2.3	Fair	Captain F. Hegemann.
Kiel	29.88	759.0	29.90	759.4	58.1	14.5	73	SW			4		2			0.064	1.62		Prof. G. Karsten.
Königsberg, (Prussia)	29.91	759.7	29.98	761.5	54.3	12.4	85	SW										Cloudy	Prof. E. Luther.
Köslin			29.97	761.2	58.6	14.8		SW			4		1			0	0		H. Müller.
Leipsic, Observatory	29.75	755.7	30.17	766.2	66.6	19.2	47	SW			4		2			0.083	2.1		Prof. Bruhns.
Memel, Naval School	29.89	759.3	29.94	760.5	52.9	11.6	88	WSW			8		10n;ks						Reinbrechtvon Skalweit.
Neufahrwasser	29.99	761.8	30.01	762.2	58.3	14.6	76	SW			4		7	W		0.161	4.1		A. Lothes.
Posen	29.82	758.9	30.17	766.3	62.4	16.9	62	SW			6–7		1					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.65	753.0	30.19	766 8	65.3	18.5	52	S			4		0			0	0		Dr. Schur.
Stuttgart	29.24	742.6	30.16	766.0	67.1	19.5	40	W			1		0			0	0		Prof. Schoder.
Treves, (Trier)	29.49	749.0	30.01	762.3	64.4	18.0	50	W			4		0			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.71	729.3	30.19	766.8	65.7	18.7	37	SW			1		0			0	0		Dr. Von Bebber.
Wustrow, Naval School	29.96	761.0	29.99	761.7	57.9	14.4	70	SW			3		4					Fair	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the mo nent of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	30.05	763.3	30.45	773.3	64.6	18.1		NE			Strong							Clear	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.81	757.1	29.86	758.4	84.8	29.3	74	SW	31.0?	13.8?			2			0	0	D. clouds	
Deesa	29.53	750.2	30.01	762.1	88.5	31.4	46	S					1	WNW		0	0	D. clouds	
Bombay	29.86	758.3	29.89	759.3	83.8	28.8	81	WNW	8.0	3.6			5	W	SSW	0	0	D. clouds	
Poona	27.85	707.5	29.85	758.2	80.3	26.8	75	NW					7	N	W	0	0	Lightning	
Lahore	29.02	737.2	29.76	755.8	86.8	30.4	31	SE	2.1	0.9			8			0	0	D. clouds	
Belgaum	27.36	695.0	29.92	759.8	73.7	23.2	85	SW	2.0	0.9			10		E	0.81	20.6	Raining	
Bangalore																			
Roorkee	28.96	735.4	29.85	758.3	80.4	26.9	57	Calm	1.0	0.4						0	0		
Agra	29.35	745.4	29.90	759.6	86.8	30.4	58	N								0	0		
Trichinopoly																			
Nagpur	28.85	732.8	29.90	759.4	79.9	26.6	48	Calm	2.5	1.1			2			0	0	Blue sky	
Madras																			
Lucknow	29.50	749.3	29.87	758.8	80.3	26.8	66	Calm	1.6	0.7						0	0	Blue sky	
Allahabad	29.56	750.7	29.87	758.6	79.3	26.3	74	Calm	0.9	0.4			0			0	0	Blue sky	
Patna	29.70	754.4	29.88	759.0	80.7	27.1	74	W	0.9	0.4			4	W	W	0	0	D. clouds	
Hazaribagh	27.89	708.4	29.92	759.8	76.3	24.6	54	NW	4.4	2.0			0			0	0	Blue sky	
Cuttack	29.84	757.8	29.92	759.9	80.0	26.7	86	S	2.3	1.0			9			0	0	D. clouds	
Calcutta (Alipore)	29.88	758.9	29.90	759.5	80.7	27.1	80	Calm	0	0			0			0	0	Blue sky	
Goalpara	29.62	749.8	29.91	759.8	78.4	25.8	83	Calm	1.7	0.8			0			0.07	1.8	Blue sky	
Chittagong	29.82	757.3	29 91	759.7	79.9	26.6	87	Calm	0.6	0.3			4			0	0	Blue sky	
Sibsagar	29.59	751.7	29.94	760.3	73.7	23.2	93	E	3.0	1.3			6	W		0.40	10.2	D. clouds	
Rangoon																			
Jubbulpore	28.56	725.3	29.93	760.2	79.0	26.1	78	NE	1.8	0.8						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters: Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 t., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.57	573.2	30.50	774.7	37.6	3.1	76	ESE			2		0			0	0		Ab. Dom. Mongini.
Stelvio	22.55	572.7	30.53	775.4	41.0	5.0		W			4		0			0	0		Signora Ernesta Manfredi.
Udine	30.06	763.5	30.48	774.1	58.8	14.9	55	SW	1.8	0.8			4			0	0		Prof. Giovanni Clodig.
Padua	30.36	771.1	30.47	773.9	59.7	15.4	60	WSW	1.8	0.8			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.27	768.9	30.47	773.9	61.7	16.5	55	SW	0	0			0			0	0		Conte Alm. Da Schio.
Verona	30.22	767.5	30.44	773.2	68.0	20.0	43	S	5.6	2.5			0			0	0		Dott. B. Bertoncelli.
Bergamo																0	0		Prof. Trionfini Carlo.
Domodossola	29.44	747.7	30.48	774.2	59.0	15.0	63	SW			4		0			0	0		Prof. Giuseppe Calza
Milan	29.97	761.2	30.50	774.7	61.9	16.6	52	NW			1		0			0	0		Ab. Gio. Capelli.
Pavia	30.15	765.8	30.50	774.7	58.1	14.5	63	NE			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.59	751.5	30.51	775.0	59.4	15.2	56	SSE	0.7	0.3			1			0	0		Prof. P. F. Denza.
Mondovi	28.55	725.2	30.49	774.4	56.7	13.7	65	NW			2		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.25	768.4	30.48	774.1	64.4	18.0	69	E			8		2			0	0		Prof. L. Vassallo.
Genoa	30.30	769.7	30.47	774.0	67.1	19.5	53	SW	3.1	1.4			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.24	768.0	30.50	774.6	61.7	16.5	54	N	1.3	0.6			0			0	0		Dott. G. Manzi.
Parma	30.15	765.8	30.49	774.4	65.8	18.8	39	NNW			2		0			0	0		Prof. P. Pigorini.
Florence	30.24	768.0	30.50	774.6	66.6	19.2	48	N			2		0			0	0		Cav. F. Meucci.
Leghorn	30.38	771.7	30.47	773.9	66.7	19.3	55	ENE	1.3	0.6			1			0	0		Prof. P. Monte.
Siena	29.26	743.3	30.51	774.9	65.1	18.4	43	SE	0	0			0			0	0		Prof. L. Toscani.
Urbino	28.89	733.9	30.47	774.0	50.9	10.5	78	SW			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.45	773.4	30.50	774.7	58.3	14.6	83	NE	6.3	2.8			0			0	0		Prof. Luigi Guidi.
Ancona	30.36	771.1	30.47	773.9	61.2	16.2	67	SE			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.35	770.8	30.46	773.7	69.4	20.8	56	SW			2		4	NE		0	0		Avv. P. Ponticelli.
Rome	30.31	769.8	30.48	774.3	67.6	19.8	57	S			2		0			0	0		Prof. P. A. Secchi.
Naples, O. U.	30.30	769.5	30.50	774.6	71.2	21.8	55	SSW			2		3			0	0		Prof. L. Palmieri.
Lecce					66.2	19.0	53	ENE	12.5	5.6			7			0	0		Prof. C. De Giorgi.
Cosenza	29.61	752.1	30.50	774.8	63.1	17.3	70	NE	0	0			0			0	0		Prof. F. D. Conti.
Cagliari	30.14	765.6	30.33	770.4	70.7	21.5	61	SE			4		4	E		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.45	773.4	30.50	774.6	69.8	21.0	65	SE			2		3	E		0	0		Prof. F. Cafiero.
Palermo	30.13	765.4	30.39	771.8	68.2	20.1	61	NE	4.3	1.9			5			0	0		Prof. G. Cacciatore.
Caltanissetta	28.45	722.7	30.39	772.0	63.0	17.2	55	E			2		3			0	0		Prof. A. Pagani.
Syracuse	30.33	770.3	30.40	772.2	70.7	21.5	61	E			4		4	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.96	760.9	30.51	775.0	67.6	19.8	64	NE	0.7	0.3			3			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.01	762.2	30.12	764.9	51.2	10.7	92	N	8	3.6		1k				0	0	Fair	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.10	586.8	30.15	765.8	49.8	9.9	73	NW	0.4	0.18		1c	1s	SW		0	0	Clear	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,593 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.99	761.7	29.99	761.7	61.5	16.4		S			4					0.024	0.6		
Groningen	29.87	758.7	29.93	760.1	58.1	14.5		SW			4					0.004	0.1		
Helder	29.89	759.1	29.89	759.1	59.0	15.0		SSW			4					0	0		
Hellevoetsluis			29.93	760.2	63.9	17.7	68	SSE			5								
Utrecht	29.92	760.0	29.97	761.2	64.4	18.0	60	SSW			4		2			0	0	Lightcloudy	H. v d Bruik.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.31	744.4	29.36	745.8	46.8	8.2	98	SSE	8.3	3.7			8			0.520	13.2	Raining	
Brönö	28.94	735.1	28.98	736.1	45.3	7.4	77	SW	29	13			10					Light rain	
Christiania	29.21	742.0	29.36	745.7	59.2	15.1	69	SSW	16	7			3			0.398	10.1		
Tromsö	28.98	736.0	29.02	737.1	37.8	3.2	80	SW	9	4			5			0.039	1.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.02	762.5	30.21	767.4	60.4	15.8	71	N	4.3	1.9			3			0	0		Dr. J. A. Sampaio
Campo Major	29.12	739.7	30.13	765.2	72.1	22.3	46	SSW	10.5	4.7			8	SSW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.02	762.5	30.09	764.3	75.4	24.1	75	WSW	6.9	3.1			8			0.232	5.9		Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	754.9	30.07	763.8	71.4	21.9	68	SSW	21.0	9.4			7	SSW		0.004	0.1		The Staff.
Ponta Delgada, (Azores)	30.14	765.5	30.21	767.3	64.8	18.2	46	N	4.9	2.2			3			0.087	2.2		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.74	755.4	30.16	766.1	58.5	14.7	74	WSW	16	7			3						Astronomical Obs.
Wilna	29.59	751.5	30.01	762.2	48.7	9.3	100	S	2	1			10					Rain and fog	Astronomical Obs
Dorpat	29.52	749.9	29.77	756.2	44.6	7.0	89	S	13	6			10						Prof. Dr. Weihrauch
St. Petersburg	29.76	755.9	29.78	756.3	46.8	8.2	67	SSW	18	8			10						Central Physical Obs.
Kuopio	29.13	740.0	29.46	748.2	39.9	4.4	100	S	34	15			10					Raining	Ch. Forsten.
Kieff	29.66	753.4	30.31	769.9	46.4	8.0	69	SW	11	5			10						Physical Cabinet.
Nikolaiev	30.42	772.7	30.49	774.5	53.6	12.0	56	Calm	0	0			0						Kurdakof.
Kertch	30.45	773.5	30.47	774.0	50.0	10.0	79	NNW	9	4			7						Lagorio.
Moscow	29.68	753.8	30.24	768.2	41.7	5.4	78	S	7	3			8						Meteorological Obs.
Lugan	30.10	764.4	30.30	769.6	54.9	12.7	55	NNW	2	1			8						Meteorological Obs.
Archangel	29.58	751.3	29.60	751.8	38.8	3.8	83	S	18	8			10						Ogorodnikof.
Tiflis	28.76	730.5	30.13	765.4	73.0	22.8	52	WNW	22	10			3						Physical Observatory.
Astrakhan	30.31	769.8	30.23	767.7	63.0	17.2	82	S	7	3			10			Blank	Blank		Sebastianof.
Kasan	29.91	759.6	30.19	766.7	44.2	6.8	73	Calm	0	0			8						Physical Cabinet.
Orenburg	30.17	766.3	30.56	776.3	38.3	3.5		SE	9	4			0						Tschernischef.
Ekaterinburg	29.26	743.1	30.23	767.8	39.0	3.9	93	SSE	4	2			10					Raining	Meteorological Obs.
Nukuss	30.17	766.2	30.40	772.1	64.8	18.2	38	NE	7	3			0						
Kasaly																			Bobrof.
Tashkend	28.71	729.1	30.43	773.0	52.7	11.5	88	NW	2	1			0						Michelson.
Barnaul	30.11	764.7	30.65	778.5	40.5	4.7	76	Calm	0	0			10						Meteorological Obs.
Yeniseisk	30.26	768.7	30.41	772.4	30.0	— 1.1	100	W	2	1			5						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.02	762.5	30.16	766.1	48.9	9.4	91	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.98	710.7	30.18	766.5	66.6	19.2	51	SE	8.9	4.00		1	0	N		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.92	759.9	30.00	762.0	77.4	25.2	88	Calm	0	0		0	1k			0.024	0.6	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.04	763.0	30.14	765.4	74.8	23.8	64	ESE	39.8	17.81		3	6	E	E	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.91	759.6	82.0	27.8	88	SE	0	0		4cs	1k	E	E	0.108	2.75	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.21	742.0	29.25	743.0	38.1	3.4	.....	S	.....	.....	6	.....	10	.....	.....	0	0	.....	
Umea	29.13	739.9	29.18	741.2	42.4	5.8	100	W	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.13	739.8	29.18	741.1	43.5	6.4	94	Calm	.....	.....	0	.....	7	.....	.....	0.102	2.6	Raining	
Stockholm	29.28	743.8	29.46	748.3	56.8	13.8	93	SSW	.....	.....	6	.....	8	.....	.....	0.031	0.8	.....	
Wisby	29.63	752.5	29.69	754.0	55.0	12.8	82	SW	.....	.....	7	.....	7	.....	.....	0.035	0.9	.....	
Sub-Series.																			
Upsala	29.35	745.6	29.43	747.5	54.5	12.5	82	WSW	18.1	8.1	.....	.....	10	.....	WSW	0	0	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.84	732.6	30.23	767.9	67.5	19.7	46	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Observatory.
Zurich	28.62	727.0	30.24	768.1	59.7	15.4	66	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.4 mm; Thermometer, +6.6 cent.; Relative Humidity, —26 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople	.....	.....	30.49	774.5	60.4	15.8	55	ENE	11	5.0	.....	.....	6	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.52	775.2	70.2	21.2	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	30.47	774.0	65.8	18.8	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.91	759.7	30.02	762.6	80.2	26.8	58	N	.....	.....	2	.....	9ck;s	.....	SW	0	0	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.20	767.1	47	8.3	.....	Calm	0	0	.....	.....	10s	.....	W	0.24	6.1	Light rain	W. R. Bigg.
*Chatham, N. B	.....	.....	30.17	766.3	41	5.0	88	Calm	0	0	.....	5ck	2ks	NW	NW	0.02	0.5	Fair	G. A. Blair.
Charlottetown, P. E. Island	.....	.....	30.09	764.3	46	7.8	84	N	13	5.8	.....	.....	5ks	.....	N	0.04	1.0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.97	761.2	30.17	766.3	46.8	8.2	94	NE	.....	.....	1	10k	0	.....	.....	0.027	0.69	Dull	James Smith, M. A.
Dalhousie, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. A. Johnson.
Esquimault, B. C	30.10	764.5	30.15	765.8	40.1	4.5	100	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.21	767.3	36	2.2	95	SW	4	1.8	.....	.....	10s	.....	S	Inap.	Inap.	Threatening	J. McWilliams.
Fredericton, N. B	30.19	766.8	30.25	768.3	39.3	4.1	82	N	2	0.9	.....	.....	8ks	.....	W	0.010	0.25	Fair	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.26	768.6	33	0.6	94	NE	9	4.0	.....	5k	5ks	NE	NE	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.36	745.7	30.15	765.8	59.9	15.5	83	SW	.....	.....	2	2ck	1s	W	.....	0	0	Very fine	H. J. Strang, M. A
Granton, Ontario	29.05	737.9	30.15	765.8	52	11.1	93	S	.....	.....	1	1c	0	N	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.92	760.0	30.06	763.5	46	7.8	88	NW	16	7.2	.....	.....	5ks	.....	NW	0.069	1.75	Fair	F. Allison, M. A.
Hamilton, Ontario	29.81	757.2	30.17	766.3	60.1	15.6	71	SW	.....	.....	2	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.80	756.9	29.82	757.4	44	6.7	92	E	.....	.....	6	.....	10n	.....	.....	1.15	29.2	Raining	E. Weedon.
*Kingston, Ontario	29.85	758.2	30.22	767.6	54	12.2	92	SW	1	0.4	.....	.....	10ks	.....	Calm	0.09	2.3	Cloudy	S. Woods, M. A.
*Montreal, Quebec	30.00	762.0	30.20	767.1	49	9.4	56	SE	4	1.8	.....	8ck	5ks	SE	.....	0.04	1.0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.43	747.5	30.13	765.3	51	10.6	100	E	5	2.2	.....	.....	10n	.....	E	0.21	5.3	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.42	747.3	30.16	766.1	53.7	12.1	93	Calm	.....	.....	0	.....	10n	.....	.....	.....	.....	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.48	748.8	30.17	766.3	55	12.8	100	S	4	1.8	.....	5c	0	SW	.....	0.10	2.5	Fair	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.61	752.1	30.25	768.3	58	14.4	97	W	3	1.3	.....	0	0	.....	.....	0.08	2.0	Clear	M. Payne.
*Quebec, Quebec	29.93	760.2	30.26	768.6	42	5.6	83	Calm	0	0	.....	.....	10n	.....	Calm	0.01	0.3	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.70	754.4	30.17	766.3	48	8.9	93	E	12	5.4	.....	.....	10s	.....	E	0.03	0.8	Cloudy	W. H. McIntyre.
St. John, N. B	30.08	764.0	30.24	768.1	41	5.0	91	N	2	0.9	.....	.....	10ks	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.38	746.2	30.07	763.8	58	14.4	91	SW	3	1.3	.....	.....	5ks	.....	W	0.35	8.9	Clearing	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.88	733.5	30.15	765.8	52.7	11.5	90	SW	7	3.1	.....	2cs	0	.....	.....	0.242	6.15	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	29.92	760.0	29.95	760.7	44	6.7	89	N	9	4.0	.....	.....	10n	.....	NE	1.26	32.0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.79	756.7	30.17	766.3	54	12.2	95	Calm	0	0	.....	.....	10ks	.....	W	0.27	6.9	Cloudy	Magnetic Observatory.
Windsor, N S	29.96	761.0	30.05	763.3	46.0	7.8	84	NW	16	7.2	.....	.....	9k;n	.....	.....	0.01	0.3	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	45.0	7.2	100	E	.....	.....	.....	.....	10n	.....	.....	1.48	37.6	Raining	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.01	762.2	30.24	768.1	46	7.8	85	NW	4	1.8			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.40	746.7	30.05	763.3	53	11.7	100	E	3	1.3			Fog		Calm	0.66	16.8	Foggy	
Atlantic City, New Jersey	30.29	769.4	30.31	769.9	53	11.7	86	W	4	1.8		0	0			0	0	Clear	
Augusta, Georgia	30.12	765.0	30.30	769.6	55	12.8	87	NE	2	0.9		8c	Sm'e	Calm	Calm	0	0	Fair	
Baltimore, Maryland	30.28	769.1	30.33	770.4	50	10.0	71	NW	2	0.9		Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.28	769.1	30.31	769.9	54	12.2	79	W	5	2.2		2ck	0	W		0	0	Clear	
Bismarck, Dakota	28.26	717.8	29.96	761.0	40	4.4	82	N	16	7.2			10s		N	0	0	Cloudy	
Boise City, Idaho	27.15	689.6	29.83	757.7	33	0.6	79	S	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	30.12	765.0	30.28	769.1	43	6.1	75	W	2	0.9		1cs	Haze			0	0	Clear	
Brackettville, Texas	28.64	727.4	29.62	752.3	76	24.4	64	SW	7	3.1			10ks		SE	0	0	Cloudy	
Breckenridge, Minnesota	28.88	733.5	29.88	758.9	44	6.7	92	NE	15	6.7			10n		NE	0.02	0.5	Light rain	
Brownsville, Texas	29.77	756.1	29.84	757.9	78	25.6	85	SE	4	1.8		0	0			0	0	Clear	
Buffalo, New York	29.46	748.3	30.16	766.1	58	14.4	75	S	7	3.1		2c	5s	SW	SW	0.14	3.6	Fair	
Burlington, Vermont	29.98	761.5	30.24	768.1	55	12.8	68	S	1	0.4			10n		Calm	0.07	1.8	Light rain	
Cairo, Illinois	29.74	755.4	30.13	765.3	60	15.6	70	SE	10	4.5		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.57	674.9	30.06	763.5	52	11.1	53	Calm				5c	Haze	S		0.03	0.8	Fair	
Campo, California	27.22	691.4	29.79	756.7	50	10.0	93	Calm	0	0			8ks		Calm	0.01	0.3	Fair	
Cape Hatteras, N. Carolina	30.27	768.8	30.27	768.8	59	15.0	81	NE	2	0.9		0	0			0	0	Clear	
Cape Henry, Virginia	30.29	769.4	30.32	770.1	58	14.4	81	Calm	0	0		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.32	770.1	30.33	770.4	61	16.1	82	NE	6	2.7		2c	0	Calm		0	0	Clear	
Cape May, New Jersey	30.29	769.4	30.32	770.1	57	13.9	76	W	9	4.0		0	0			0	0	Clear	
Charleston, South Carolina	30.23	767.8	30.30	769.6	63	17.2	72	NE	9	4.0		0	0			0	0	Clear	
Cheyenne, Wyoming	23.95	608.3	29.89	759.2	29	—1.7	89	N	8	3.6			10s		Calm	0.20	5.1	Cloudy	
Chicago, Illinois	29.35	745.5	30.04	763.0	56	13.3	81	SW	7	3.1		0	Fog		Calm	0	0	Clear	
Cincinnati, Ohio	29.52	749.8	30.17	766.3	50	10.0	86	SE	1	0.4		2cs	Fog	S	S	0	0	Clear	
Cleveland, Ohio	29.51	749.5	30.24	768.1	53	11.7	66	SE	10	4.5		0	0			0	0	Clear	
Concho, Texas					73	22.8	63	SE	20	8.9		8cs	0	SE		0	0	Cloudy	
Corsicana, Texas	29.40	746.7	29.85	758.2	71	21.7	90	SE	10	4.5			10s		SE	0.03	0.8	Cloudy	
Davenport, Iowa	29.32	744.7	29.94	760.5	59	15.0	76	E	4	1.8		7ck	0	W		0	0	Fair	
Denison, Texas	29.15	740.4	29.93	760.2	61	16.1	100	N	12	5.4			10n		N	3.41	86.6	Heavy rain	
Denver, Colorado	24.71	627.6	29.93	760.2	35	1.7	90	N	5	2.2			10s		Calm	0.18	4.6	Threatening	
Detroit, Michigan	29.47	748.5	30.14	765.5	55	12.8	68	SW	7	3.1		0	1s		Calm	Inap.	Inap.	Clear	
Dodge City, Kansas	27.26	692.4	29.52	749.8	48	8.9	85	N	20	8.9			10s		S	0.39	9.9	Cloudy	
Dubuque, Iowa	29.23	742.4	29.91	759.7	58	14.4	87	S	6	2.7		10cs	0	S		0.10	2.5	Cloudy	
Duluth, Minnesota	29.36	745.7	30.04	763.0	48	8.9	85	SE	32	14.3			10n		E	0.07	1.8	Light rain	
Eagle Pass, Texas	29.00	736.6	29.70	754.4	76	24.4	72	SE	11	4.9		0	5s		SE	0	0	Fair	
Eastport, Maine	30.14	765.5	30.21	767.3	41	5.0	91	NW	13	5.8		0	8s		NW	0	0	Fair	
Erie, Pennsylvania	29.46	748.3	30.17	766.3	59	15.0	59	S	12	5.4		2c	0			0	0	Fair	
Escanaba, Michigan	29.42	747.3	30.07	763.8	49	9.4	93	N	20	8.9			10s		N	0.80	20.3	Cloudy	
Florence, Arizona	28.19	716.0	29.79	756.7	66	18.9	63	SE					10n		S	0.07	1.8	Light rain	
Fort Bayard, New Mexico	23.86	606.0	29.86	758.4	44	6.7	44	SW	4	1.8		0	8s		SW	0	0	Cloudy	
Fort Craig, New Mexico	25.29	642.4			47	8.3	48	SW	2	0.9		0	8s		SW	0	0	Fair	
Fort Gibson, Indian Ter.	29.32	744.7	29.84	757.9	67	19.4	90	S	20	8.9			10n		S	0.14	3.6	Light rain	
Fort Griffin, Texas	28.55	725.2	29.78	756.4	65	18.3	83	NW	8	3.6			10ks		NW	2.15	54.6	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.53	724.6	29.64	752.8	66	18.9	73	SE	10	4.5			10s		W	0.14	3.6	Threatening	
Fort Sully, Dakota	28.22	716.8	29.91	759.7	39	3.9	100	NE	12	5.4			10n		NE	0.06	1.5	Light rain	
Galveston, Texas	29.87	758.7	29.91	759.7	77	25.0	95	SE	8	3.6		0	2ks		SE	0	0	Fair	
Grand Haven, Michigan	29.42	747.3	30.06	763.5	60	15.6	85	S	17	7.6		2k	4s	SW	SW	0	0	Fair	
Indianapolis, Indiana	29.38	746.2	30.16	766.1	55	12.8	73	SE	5	2.2		0	0			0	0	Clear	
Indianola, Texas	29.84	757.9	29.86	758.4	78	25.6	86	SE	12	5.4		5k	0	S		0.25	6.3	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.15	765.8	30.18	766.6	74	23.3	63	NE	6	2.7		5k	0	NE		0	0	Fair	
Keokuk, Iowa	29.28	743.7	29.88	758.9	59	15.0	81	SE	10	4.5		0	4s		Calm	0	0	Fair	
Key West, Florida	29.97	761.2	30.00	762.0	78.0	25.6	84	E	8	3.6		6cs;k;h7	1ks	Calm; E		1.44	36.6	Cloudy	
Kittyhawk, North Carolina	30.34	770.6	30.37	771.4	59	15.0	87	NE	3	1.3		0	0			0	0	Clear	
Knoxville, Tennessee	29.29	744.0	30.32	770.1	49	9.4	85	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.13	739.9	29.85	758.2	55	12.8	100	Calm	0	0			Fog			0.10	2.5	Foggy	
La Mesilla, New Mexico	25.87	657.1	30.02	762.5	39	3.9	27	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					76	24.4	81	SE	10	4.5		10k	0	S		0	0	Cloudy	
Leavenworth, Kansas	28.96	735.6	29.78	756.4	59	15.0	87	S	6	2.7		8k	0	S		0.04	1.0	Cloudy	
Los Angeles, California	29.44	747.8	29.78	756.4	56	13.3	87	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.65	753.1	30.21	767.3	55	12.8	79	SE	1	0.4		2c	Fog	Calm	Calm	0	0	Foggy	
Lynchburg, Virginia	29.63	752.6	30.33	770.4	51	10.6	72	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Maricopa Wells, Arizona					60	15.6	54	W				10k	0	N		0	0	Cloudy	
Marquette, Michigan	29.36	745.7	30.06	763.5	50	10.0	71	NE	6	2.7			10s		Calm	0	0	Cloudy	
Mason, Texas	28.20	716.3	29.86	758.4	74	23.3	59	S	12	5.4			10s		S	0	0	Cloudy	
Memphis, Tennessee	29.80	756.9	30.12	765.0	62	16.7	83	SE	4	1.8		0	5ks		SW	0	0	Fair	
Milwaukee, Wisconsin	29.34	745.2	30.02	762.5	56	13.3	81	SW	6	2.7		1cs	0			0.01	0.3	Clear	
Mobile, Alabama	30.09	764.3	30.13	765.3	66	18.9	81	E	11	4.9		0	0			0	0	Clear	
Montgomery, Alabama	29.99	761.7	30.23	767.8	59.5	15.3	79	E	11	4.9		8ck	0	SE		0	0	Fair	
Morgantown, West Virginia	29.23	742.4	30.29	769.4	56	13.3	74	Calm	0	0		0	Haze			0	0	Clear	
Mt. Washington, N. H.	23.90	607.0	30.26	768.6	33	0.6	89	N	40	17.9		8k	5s	N	N	0	0	Cloudy	
Nashville, Tennessee	29.69	754.1	30.23	767.8	56	13.3	80	Calm	0	0		0	Haze			0	0	Clear	
New Haven, Connecticut	30.16	766.1	30.28	769.1	49	9.4	81	N	2	0.9			10s		SW	0	0	Cloudy	
New London, Connecticut	30.24	768.1	30.29	769.4	47	8.3	69	N	4	1.8		2cs	1s;hz	W	Calm	0	0	Fair	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	72	22.2	85	E	12	5.4		0	1s		Calm	0	0	Clear	
Newport, Rhode Island	30.21	767.3	30.26	768.6	48	8.9	85	N	4	1.8		1c	0	NW		0	0	Clear	
New York, New York	30.12	765.0	30.30	769.6	53	11.7	73	NW	1	0.4			10s;fg		Calm	0	0	Cloudy	
Norfolk, Virginia	30.28	769.1	30.34	770.6	53	11.7	86	S	1	0.4		0	Fog		Calm	0	0	Clear	
North Platte, Nebraska	26.94	684.3	29.54	750.3	36	2.2	90	NW	20	8.9		0	5s		NW	0.70	17.8	Clearing	
Olympia, Washington Ter.	30.10	764.5	30.14	765.5	39	3.9	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	28.61	726.7	29.65	753.1	59	15.0	87	S	15	6.7			10s		SW	0.46	11.7	Cloudy	
Oswego, New York	29.87	758.7	30.20	767.1	53	11.7	86	SE	6	2.7			10s		Calm	0.01	0.3	Cloudy	
Pembina, Dakota	29.39	746.5	30.25	768.3	32	0.0	84	N	10	4.5			10ks		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.27	768.8	30.32	770.1	52	11.1	79	NW	3	1.3			10ks;fg		NW;Calm	0	0	Cloudy	
Phœnix, Arizona					56	13.3	45	SE				0	8ks		S	0	0	Cloudy	
Pike's Peak, Colorado	17.62	447.5	29.83	757.7	11	—11.7	79	SW	3	1.3		0	5s		SW	0.80	20.3	Fair	
Pioche, Nevada	23.85	605.8	29.62	752.3	37	2.8	62	N	7	3.1		0	8s		NW	0	0	Cloudy	
Pittsburg, Pennsylvania	29.44	747.8	30.27	768.8	45	7.2	92	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.46	748.3	30.12	765.0	55	12.8	80	S	6	2.7		5cs	0	Calm		0.28	7.1	Fair	
Portland, Maine	30.19	766.8	30.24	768.1	47	8.3	85	NW	4	1.8		2k	Fog	NW		0	0	Fair	
Portland, Oregon	30.10	764.5	30.20	767.1	41	5.0	100	Calm	0	0			Fog		Calm	Inap.	Inap.	Foggy	
Prescott, Arizona	24.53	623.0	29.89	759.2	42	5.6	68	Calm	0	0		5ck	Sm'e	Calm	Calm	0	0	Smoky	
Punta Rassa, Florida	30.03	762.7	30.05	763.3	76	24.4	76	NE	12	5.4			10ks		Calm	0	0	Cloudy	
Red Bluff, California	29.58	751.3	29.94	760.5	58	14.4	47	N	8	3.6		0	0			0	0	Clear	
Rochester, New York	29.54	750.3	30.14	765.5	57	13.9	81	SW	7	3.1			10s		Calm	0.08	2.0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.59	751.6	30.17	766.3	41	5.0	100	N	1	0.4		Haze	8s		Calm	0.01	0.3	Cloudy	
Sacramento, California	29.76	755.9	29.85	758.2	49	9.4	77	N	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.45	748.0	30.02	762.5	58	14.4	82	S	12	5.4		0	0			0	0	Clear	
St. Marks, Florida	30.16	766.1	30.16	766.6	62	16.7	85	E	10	4.5		5c	0	SW		0	0	Fair	
St. Paul, Minnesota	28.99	736.3	29.80	756.9	51	10.6	93	NE	8	3.6			10s		Calm	0.82	20.8	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.48	647.2	29.80	756.9	43	6.1	67	Calm	0	0		2c	2s	Calm	Calm	0.03	0.8	Fair	
San Antonio, Texas	29.13	739.9	29.68	753.9	75	23.9	90	SE	5	2.2			10ks		SE	0	0	Cloudy	
San Diego, California	29.75	755.6	29.82	757.4	62	16.7	53	SW	9	4.0			10n		Calm	0.01	0.3	Light rain	
Sandusky, Ohio	29.52	749.8	30.19	766.8	56	13.3	68	S	10	4.5		1c	Sm'e	Calm	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.27	768.8	30.29	769.4	55	12.8	87	W	5	2.2		10ck	Haze	NW		0	0	Cloudy	
San Francisco, California	29.83	757.7	29.89	759.2	53	11.7	90	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.08	586.2	29.62	752.3	39.5	4.2	63	N	3	1.3			10s		Calm	0	0	Cloudy	
Savannah, Georgia	30.16	766.1	30.26	768.6	62	16.7	83	E	6	2.7		2c	2s	SW	E	0	0	Fair	
Shreveport, Louisiana	29.77	756.1	29.99	761.7	68	20.0	89	SE	10	4.5			10s		S	0	0	Cloudy	
Smithville, North Carolina	30.30	769.6	30.34	770.6	58	14.4	87	N	8	3.6		1c	0	SW		0	0	Clear	
Springfield, Massachusetts	30.08	764.0	30.22	767.6	45	7.2	76	N	1	0.4		5ck	0	NW		0	0	Fair	
Stanwix, Arizona																			
Stockton, Texas	26.75	679.4	29.75	755.6	56	13.3	57	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.21	767.3	30.26	768.6	53	11.7	73	E	4	1.8		5ck;k	0	W		0	0	Fair	
Toledo, Ohio	29.48	748.8	30.15	765.8	56	13.3	74	S	3	3.6		0	0			0	0	Clear	
Tucson, Arizona	27.38	695.4	29.94	760.5	67	19.4	56	W				0	10s		W	0	0	Threatening	
Tybee Island, Georgia	30.21	767.3	30.24	768.1	70	21.1	79	NE	20	8.9		2c	0	Calm		0	0	Fair	
Umatilla, Oregon	29.82	757.4			35	1.7	80	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.85	758.2	30.11	764.8	62	16.7	88	SE	1	0.4		0	0			0	0	Clear	
Virginia City, Montana	24.26	616.2	29.74	755.4	35	1.7	90	NE	10	4.5			10s		NE	0	0	Cloudy	
Visalia, California	29.51	749.5	29.88	758.9	48	8.9	85	Calm	0	0		0	0			0	0	Clear	
Washington, D. C	30.21	767.3	30.33	770.4	50	10.0	89	Calm	0	0		Haze	Sm'e			0	0	Smoky	
Wickenburg, Arizona					40	4.4	48	N				0	8ks		Calm	0	0	Threatening	
Wilmington, N. Carolina	30.25	768.3	30.33	770.4	55	12.8	80	NE	3	1.3		0	0			0	0	Clear	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	27	— 2.8	54	SW	4	1.8		2k	0	Calm		0	0	Fair	
Wood's Holl, Mass	30.29	767.8	30.28	769.1	55	12.8	80	NE	2	0.9		0	0			0	0	Clear	
Yankton, Dakota	28.32	719.3	29.57	751.1	51	10.6	93	Calm	0	0			10n		Calm	1.15	29.2	Light rain	
Yuma, Arizona	29.60	751.8	29.76	755.9	63	17.2	52	W	12	5.4		5k		W		0	0	Fair	
Sub-Series.																			
York Factory, B. A.	30.18	766.6	30.22	767.6	25.5	—3.6	94	W	11	4.9		1k	3s	W	W	Inap.	Inap.	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.93	760.2	29.95	760.7	79	26.1	86	E	4.8	2.1		0	2os			0.04	1.0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.12	765.0	30.13	765.3	81	27.2	78	Calm	0	0		5c	2s	SE		0	0		James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	85.5	29.7		E			2					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					82	27.8	83	E				4ck	8ks	NE		0.37	9.4	Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.80	756.9	29.82	757.4	82	27.8	87	E				5k	5ks		E				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.02	762.5	84	28.9	75	E			1	3c	6k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.25	641.3			65.5	18.6	52	Calm			0		10n;s			0.32	8.1	Light rain	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,020 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 760 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,362.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,323 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.88	758.9	53	11.7	53	11.7	86	WSW	13	5.8			0			Blank	Blank			Clear	
Navy Yard, Pensacola, Fla.	30.25	768.3			71	21.7	71	NE	18	8.0			7		ESE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.27	768.8	66	18.9	46	7.8	84	N			1					0	0			Bright	
Naval Hospital, Yokohama, Japan	29.99	761.7	63	17.2	59	15.0	59	NW			4		7k		NNW	0	0			Cloudy	
Adams, Buenos Ayres	29.79†	756.7†	62	16.7	61	16.1	88	SE			3–5		10		S	Light	Light			Drizzling	
Alert, Vladivostok	30.22†	767.6†	49	9.4	49	9.4	63	E			1		0							Blue sky	
Alliance, Constantinople, Turkey.	30.58	776.7	65	18.3	64	17.8	53	E			3		4		E					Pleasant	
Ashuelot, Tientsin, China	30.30	769.6	58	14.4	58	14.4	54	Calm			0		0							Blue sky	
Canonicus, New Orleans, La	30.06	763.5	52	11.1	72	22.2	85	NE			2		3							Fair	
Colorado, New York, N. Y.	30.38	771.6	63	17.2	53	11.7	80	Calm	0	0			10		W	0	0			Dense fog	
Despatch, Constantinople, Turkey.	30.64	778.2	90	32.2	66	18.9	50	NNE			4–5		1		Calm					Clear	
Franklin, Norfolk, Va	30.40	772.1	52	11.1	56	13.3	94	W	2	0.9			7		W	0	0				
Frolic, N. 25° 16′, W. 28° 32′	30.27	768.8	82	27.8	83	28.3	83	ENE			5–6		6k		N&E	Blank	Blank	Heavy	N&E	D. clouds	
Gettysburg, Naples, Italy	30.21‡	767.3‡			74	23.3	86	Calm			0		0			0	0			Blue sky	
Kearsarge, N. 6° 40′, E. 78° 50′	29.97	761.2			83	28.3	92	SSW			3		9		S&W	1.1	28.	Long	S	Raining	
Lackawana, Esquimault, B. C.	30.13	765.3			42	5.6	91	Calm			0		0							Foggy	
Marion, Smyrna, Turkey	30.29	769.4	69	20.6	67	19.4	89	NE			4		3		Calm	0	0	Smooth		D. clouds	
Michigan, Chicago, Ill	29.58	751.3	65	18.3	54	12.2	74	S			2		0							Fair	
Monocacy, N. 35° 20′, E. 140° 45′	30.01	762.2	67	19.4	66	18.9	64	SE			2		3		SE	0	0	Smooth		D. clouds	
Monongahela, N. 35° 58′, W. 40° 23′	30.18	766.6	70	21.1	71	21.7	71	SSE			2–4		cs			Light	Light	Long	N&E	D. clouds	
New Hampshire, Port Royal, S. C.	30.43	772.9			65	18.3	73	NE	15	6.7			3		W	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.20	767.1	61	16.1	62	16.7	83	NNE	3	1.3			2		N	0.25	6.3	Slight	N	Bright	
Onward, Callao, Peru	30.04†	763.0†	70	21.1	68	20.0	84	SSE			3		10					Long	W	Hazy	
Ossipee, Boston, Mass	30.32	770.1	74	23.3	46	7.8	84	NW			1									Foggy	
Palos, Shanghai, China	30.19	766.8	70	21.1	60	15.6	82	E			2		5		E	0	0			Clear	
Pensacola, Mare Island, Cal.	29.96	761.0			55	12.8	93	SW			2		0							Clear	
Plymouth, Norfolk, Va	30.60	777.2	62	16.7	56	13.3	94	Calm			0		0							Clear	
Ranger, N. 31° 25′, E. 125° 10′	30.30	769.6			68	20.0	79	NE			1		9		N	0	0	Light	NW	Cloudy	
Rio Bravo, Brownsville, Texas	29.74	755.4			78	25.6	91	ESE			1		1		ESE					D. clouds	
Santee, Annapolis, Md	30.37	771.4	60	15.6	56	13.3	75	Calm			0		1			0	0			Hazy	
St. Louis, League Island, Pa	30.20	767.1	52	11.1	51	10.6	93	SW	3	1.3			5		NW	0	0			Fair	
Tennessee, Yokohama, Japan	30.00	762.0	66	18.9	63	17.2	57	NNE	10	4.5			4		Calm	0	0	Smooth		D. clouds	
Trenton, Marseilles, France	30.40	772.1	73	22.8	71	21.7	53	SE	16	7.2			1		S&E	0	0			D. clouds	
Vandalia, N. 41° 10′, E. 11° 52′	30.54	775.7	71	21.7	70	21.1	66	S			0–1		3		Calm					D. clouds	
Wabash, Boston, Mass	30.25	768.3	48	8.9	50	10.0	72	NW	1	0.4			4		Calm	0	0			Hazy	
Wyoming, Washington, D. C.	30.72	780.3†	58	14.4	55	12.8		Calm			0		0							Blue sky	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.15*	765.8*	76	24.4	91	ENE			2		8		ENE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 21′, W. 143° 14′			30.43†	772.9†	67	19.4		SSW			4		8		SE	Smooth	WNW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 38° 54′, E. 148° 44′			30.15*	765.8*	64	17.8	??	Var.			2		c;s		Calm	Long	N	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 29° 54′, E. 154° 56′			29.92	760.0	73	22.8	90	Var.			1-3		7		Var.	Moderate	N	D. clouds	Capt. H. Parsell.
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andresen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 49° 50′, W. 7° 14′			29.4a	749.0	66.0	18.9	84	S			6		Haze			Rough	SSW	Clear	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			29.46*	748.3*	71	21.7		WSW			4		3		WNW				Captain Sargent.
S. S. Ohio, N. 50° 52′, W. 30° 18′			29.98	761.5	49	9.4	85	NW			6		10		NW	Large	NW	Stormy	Captain Morrison.
S. S. Pennsylvania, N 41° 04′ W. 58° 35′			29.78†	756.4†	60	15.6	88	NNW			7		8		NNW	Large	N&NW	Squally	Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 32° 27′, W. 79° 54′			30.27	768.8	70	21.1	80	NE	13	5.8		1c	1s			Short		Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

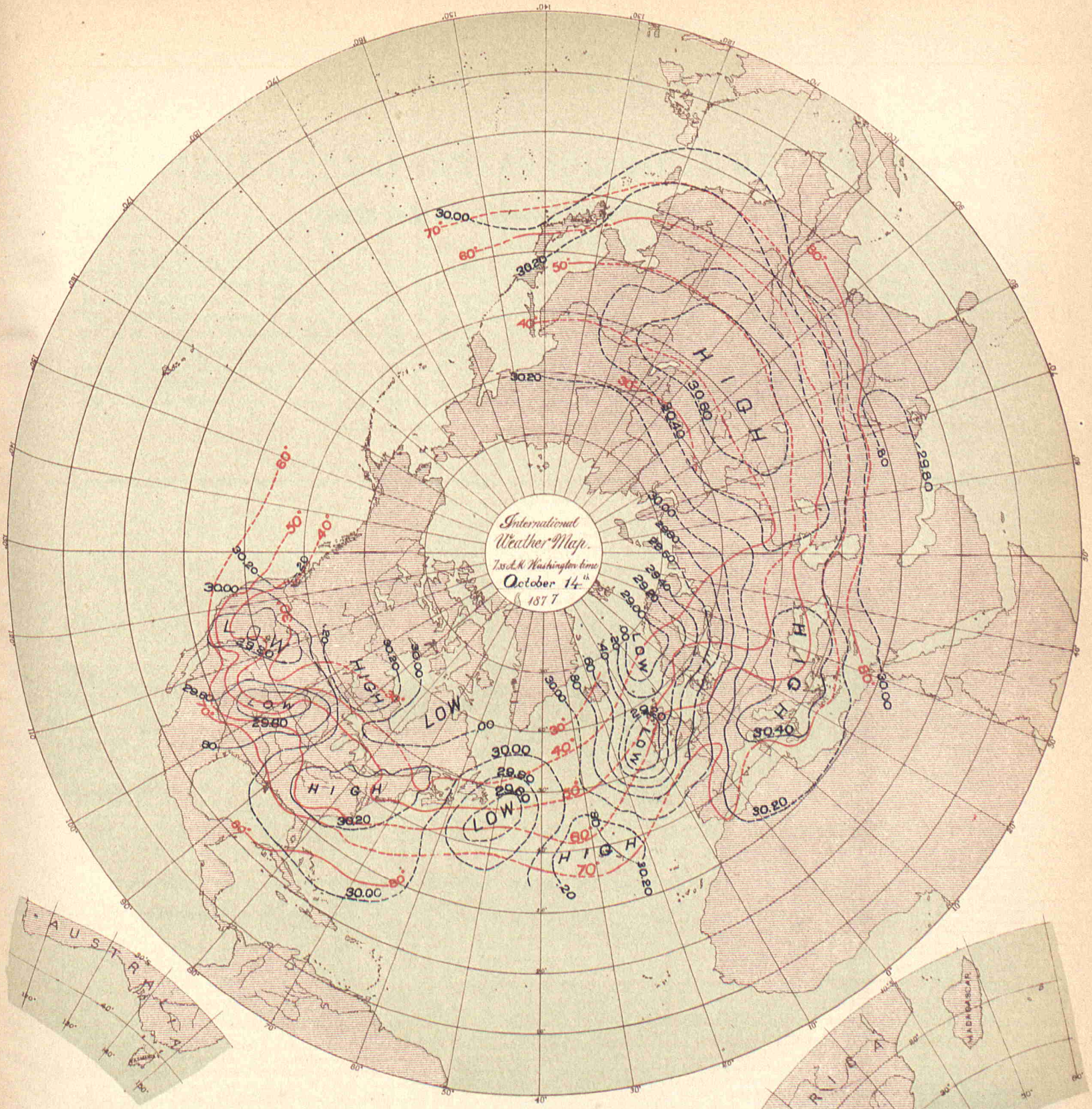
NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 15, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.29	769.4	72.7	22.6	58	Calm			0		3			0	0	Pretty Fair.	Michel.
Algiers			30.23	767.9	76.8	24.6	38	N			1		0			0	0	Clear	Peter.
La Calle			30.25	768.3	78.1	25.6	73	N			1		1			0	0	Very fair.	Fleury.
Tunis			30.26	768.5	77.0	25.0	60	E			3		4			0	0	Cloudy	Jacques.
Sfax																0	0		Husson.
Saida			30.29	769.3	76.6	24.8	17	N			3		2			0	0	Fair	Millot.
Tebessa			30.27	768.9				Calm			0		0			0	0	Clear	Bourgeois.
Geriville			30.26	768.7	66.0	18.9	24	E			2		2			0	0	Fair	Lemaillot.
Laghouat			30.26	768.6	68.0	20.0	40	W			2		0			0	0	Clear	François.
Biskra			30.32	770.0	77.5	25.3	29	Calm			0		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.64	752.8	30.17	766.2	68.7	20.4	37	SW			2		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.39	746.5	30.14	765.6	68.4	20.2	44	NE			1		0			0	0		Dr. Wierzbiski.
Eperies	29.37	745.9	30.24	768.2	58.5	14.7	57	S			5		0			0	0		Julius Mikolik.
Gratz	28.90	734.1	30.15	765.9	57.0	13.9	80	SSE			2		0			0	0		Andreas Rospini.
Hermannstadt	28.84	732.6	30.26	768.6	61.5	16.4	45	SE			1		2			0	0		Prof. Reissenberger.
Kremsmünster	28.75	730.3	30.10	764.4	54.3	12.4	82	Calm			0		0			0	0		Prof. C. Wagner.
Lemberg	29.21	741.9	30.18	766.6	62.2	16.8	63	S			2		0			0	0		Dr. T. Stanecki.
Pola	30.18	766.6	30.30	769.5	60.8	16.0	79	WNW			1		0			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.95	760.7	30.23	767.7	66.2	19.0	51	S			2		0			0	0		Karl Stancel.
Trieste	30.18	766.5	30.28	769.1	60.1	15.6	81	W			1		1			0	0	Clear	P. Busin.
Vienna	29.43	747.6	30.12	765.1	63.5	17.5	59	S			1		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.60	726.4	30.11	764.8	52.9	11.6	79	S			6		10			0.004	0.1		Royal Observatory.
Brussels	29.75	755.7	29.95	760.8	59.7	15.4	58	SW			8	8	2	SSW	SW	0.156	3.95		
Furnes	29.87	758.7	29.80	759.3	51.4	10.8	88	SW			6		10			0.236	6.0	Heavy rain.	
Maeseyck	29.83	757.6	29.96	760.9	60.6	15.9	62	S			8		5			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer.
Aberdeen	29.00	736.6	29.10	739.1	45.8	7.7		WSW	36	16.1			9			0.120	3.05	Squally	W. Boswell.
Ardrossan	29.32	744.7	29.33	745.0	48	8.9		WSW			7		6					Showery	William McNeil.
Armagh, Observatory			29.54	750.3	45.2	7.3		SW	20	8.9			5					Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.63	752.6	48.7	9.3		WSW	38	17.0			4					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.69	754.1	45.7	7.6		SW			4		10					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.24	742.7	29.63	752.6	48.3	9.1		NW			6		7			0.01	0.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	84	28.9		NE			2		3					D. clouds	Pvt. G. W. Roberts, A
Cambridge, Observatory			29.79	756.7	55.0	12.8		WSW			3		7					Overcast	H. Todd. [H.C.
Cardington			29.81	757.2	55.4	13.0		W			8		3					D. clouds	John McLaren.
Chatham, School M. E.	29.73	755.1	29.86	758.4	55.2	12.9		SW			2		7					D. clouds	Lt. W. G. Morris, R. E.
Dartmoor	28.50	723.9	30.00	762.0	44.0	6.7		W			7		5					Rain & hail	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.48	748.8	29.50	749.3	46	7.8		WNW			6		5					D. clouds	D. Mac Gowan.
Dover	29.87	758.7	29.90	759.4	56	13.3		WSW			6		7					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.63	752.6	51.0	10.6		SW	9.8	4.4			7					Squally	Thomas Mackereth.
Falmouth, Observatory	29.77	756.1	30.01	762.2	51.0	10.6		W			5		5					D. clouds	The Staff.
Fort Napier, (Natal)	27.80	706.1	30.02	762.5	69.7	20.9		E			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.89	759.2	82	27.8		N			0		5					D. clouds	
Galway, Queen's College					57	13.9		W			7		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.22	767.6	30.26	768.6	73.4	23.0		E			1		1					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.11	739.4	29.32	744.7	44.2	6.8		WSW			8		10					Hailing	D. G. Maclean.
Great Yarmouth	29.76	755.9	29.76	755.9	54	12.2		W			5		3					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.68	753.9	29.85	758.2	55.3	12.9		WSW			4		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.80	756.9	30.02	762.5	54.0	12.2		WSW			6		8					Rain & hail	Dr. S. E. Hoskins, F.R.S.
Helston			30.05	763.3	56	13.3		W			6		2			0.10	4.8	D. clouds	M. P. Moyle.
Holyhead	29.63	752.6	29.68	753.9	48	8.9		W			6		3			Blank	Blank	Squally	John Tilston.
Jersey	29.78	756.4	30.08	764.0	55.0	12.8		SW			7		7			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory			29.86	758.4	55.4	13.0		WSW	21	9.4			7					Threatening	The Staff.
Kingstown	29.67	753.6	29.70	754.4	39	3.9		W			6		10					Raining	George Mitchell.
Leicester, Museum			29.68	753.9	56.1	13.4		W			6		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.17	766.3	30.24	768.1	71.0	21.7		NE			1		6					D. clouds	Sergt. Fred Francis, A. H. C.
Nairn	28.90	734.0	29.00	736.6	44	6.7		NW			6		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.04	763.0	80.0	26.7		NE			4		6					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.27	743.4	29.46	748.3	53.5	11.9		SW			6		3c;k		WSW;SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.22	742.2	29.74	755.4	52.4	11.3		WSW			6		7					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.82	757.4	55	12.8		W			4		9					Overcast	F. Lucas
Plymouth	29.88	758.9	29.96	761.0	53.6	12.0		W			5		10					Overcast	John Merrifield.
Roche's Point	29.82	757.4	29.86	758.4															W. Kennedy.
Saint Ann's Head	29.63	752.6	29.79	756.7	50	10.0		W			7		5					Squally	John C. Walker.
Sandwick Manse, (Orkneys)			29.72	754.9	46.8	8.2		W	40	17.9			10					Misty	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.23	767.8	61.4	16.3		NE			2		3			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.39	746.5	29.64	752.8	51.1	10.6		NW			6		3			0.16	4.1	Blue sky	W. F. Cooper.
Silloth Rectory	29.43	747.5	29.46	748.3	49.7	9.8	61	W			6		3			0	0	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					42.1	5.6		W			4		10					Raining	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			28.97	735.8	41	5.0		W			6		10					Raining	John Smith.
Stratfield Turgiss	29.64	752.8	29.85	758.2	62.8	17.1		SW			3		9					Squally	Rev. C. H. Griffith, F.M.S.
Thurso			28.80	731.5	45	7.2		SW			6		9					Gloomy	John Trotter.
Truro, Royal Institution			30.07	763.8	54	12.2		W			8		10					Raining	W. Newcombe.
Valencia, Observatory			29.83	757.7	49.9	9.9		W	39	17.4			7					Squally	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		W			8		5			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.84	757.9	29.88	758.9	80.1	26.7	37	SSE	14	6.3		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.74	755.4	45.0	7.2	81	S			3		6k			0.25	6.3		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.34	745.2	45.8	7.7		W			8		6k			0.03	0.8	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.90	759.4	30.09	764.3	75.7	24.3	67	E	16.0	7.2		1	2		E	0.04	1.0	Fine	C. Meldrum.
Melbourne, Observatory	30.10	764.5	30.19	766.8	47.0	8.3	78	W	9	4.0			5			0.02	0.5	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.09	738.9	47	8.3		W			6		10			2.2	56.		J. Youngclause.
North Unst, (Shetland Is.)			28.63	727.2	52	11.1		S			6		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0-9	Direction from—		
S. S. Algeria, N. 44° 56′, W. 44° 15′			29.24	742.7	62	16.7		WSW			2		9			15*	S;E	Showery	Capt. W. Watson.
S. S. Batavia S. 42° 25′, W. 59° 55′			30.03	762.7	53	11.7		NNW			5		8			6	NNW	D. clouds	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 41° 15′, W. 60° 55′			30.05	763.3	57	13.9		NNW			5		9			6	NE	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 6′			30.09	764.3	50	10.0		ENE			2		10			6	NW	Overcast	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 47° 30′, W. 26° 0′			30.28	769.1	58	14.4		SW			3		10			5	NNW	Showery	Capt. Alex. Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
San José	26.22	666.0			72.0	22.2	89	SE			2		1pks		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.74	755.4	29.79	756.6	56.3	13.5	76	SW			2		2						
Fanöe	29.65	753.2	29.67	753.7	57.0	13.9	78	SW			6		8						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	29.88	759.0	29.93	760.1	31.5	—0.3	96	NE			6		5						
Thorshavn, (Faröe)	29.06	738.2	29.10	739.1	35.4	1.9	84	NNE			8		10						Rain & hail.
Vestervig	29.33	745.0	29.50	749.3	55.0	12.8	85	SSW			7		5						Raining

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.60	751.7	30.15	765.7	60.8	16	10	SW			1		5		SW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.87	758.8	29.98	761.6	61.2	16.2	56	WSW			2		5		S	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.22	767.5	30.30	769.5	69.1	20.6	58	SE			1		8		SW	0	0	Very cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.64	752.9	30.21	767.4	55.0	12.8	78	SW			2		10		SW	Inap.	Inap.	Sprinkling	C. Saillard.
Beaumette Obs'y (Angers)	29.99	761.8	30.16	766.0	57.4	14.1	53	WSW	15.7	7.0					SW	0.039	1.0		Albert Cheux.
Beauvais	29.76	755.9	30.04	763.1	60.4	15.8	53	SW			4		8		WSW	0	0	Very cloudy	Normal School.
Besançon	29.34	745.2	30.23	767.7	62.2	16.8	64	SSW			4		8		SW	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.41	747.1	30.34	770.7	62.8	17.1	76	W			6		10n		N	0	0	Covered	Normal School.
Bourges, Normal School	29.64	752.8	30.19	766.9	55.6	13.1	88	S			4		10		WSW	0.094	2.4	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.84	758.0	30.06	763.5	57.7	14.3	60	W			4		2		W	0.010	0.25	Squally	The Staff.
Carcassonne, Normal School	29.95	760.7	30.37	771.4	56.8	13.8	82	E			2		10		W	0	0	Covered	Vateau, Director.
Caen	29.98	761.6	30.06	763.5	61.2	16.2	87	NE			8		0			0	0	Clear	Normal School.
Chartres, Normal School	29.49	749.0	30.05	763.3	59.4	15.2	73	SSW			6		0			0	0	Clear.	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.81	757.2	30.13	765.3	55.4	13.0	79	SSW			4		10kn		SSW	0.008	0.2	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.91	734.2	30.28	769.0	53.6	12.0	63	W			4		10		SW	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.29	743.9	30.17	766.3	56.5	13.6	75	S			6		10n		S	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.22	742.1	30.36	771.1	68.5	20.8	51	SW			4		8		SW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.01	762.2	30.22	767.6	59.0	15	58	NW			6		8		SW	0.16	4.	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.87	758.8	30.18	766.6	57.9	14.4	58	NW			6		5		NW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.36	745.7	30.28	769.0	57.6	14.2	73	SE			6		10		NE	0	0	Covered	Pin, Director.
Lorient, Naval Observatory	30.10	764.6	30.20	767.1	56.8	13.8	62	W			4		8		W	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.56	750.7	30.24	768.1	62.2	16.8	83	NW			6		5		W	0	0	Cloudy	M. Marchal, Director.
Metz																0			M. A. Schuster, Dir.
Mirecourt	29.24	742.6	30.28	769.2	57.0	13.9	65	SW			6		5		NE	0	0	Cloudy	Normal School
Nismes, Normal School	30.06	763.4	30.26	768.5	64.8	18.2	81	S			2		5		N	0.098	2.50	Cloudy	Boyer, Director.
Orleans, Normal School	29.81	757.2	30.20	767.0	59.7	15.4	66	SW			4		8		W	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.86	758.4	30.10	764.4	61.5	16.4	41	SW			3		8			0	0	Very cloudy	National Observatory.
Privas	29.24	742.8	30.32	770.0	59.9	15.5	79	S			2		10		S	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.24	768.0	30.27	768.8	62.2	16.8	63	SW			6		0			0.04	1.	Clear	Lt. Decante, Director.
Rouen, Normal School	29.98	761.6	30.07	763.8	57.6	14.2	86	SW			2		2		SW	0	0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.08	738.6	30.17	766.2	54.5	12.5	83	W			2		5		W	0.12	3.	Cloudy	T. Hugues, Director.
Villefranche	29.60	751.8	30.32	770.0	55.9	13.3	85	NNW			4		10		Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.8	28.2										0	0		L'Abbé Marchesi.
Marseilles, Observatory			30.23	767.7	69.3	20.7	72	SE			1–2		10					Rainy	The Staff.
Mont-Louis	25.13	638.2	30.44	773.2	45.3	7.3	69	N	18.6	8.33			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.81	757.1	30.08	764.1	61.2	16.2	47	WSW			6		8		SW	Inap	Inap.	Squally	Marié Davy, Director.
Perpignan			30.32	770.1	62.6	17.0	59	NW	22.4	10.00			9		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.43	544.3			29.8	— 1.2		SW			2		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.73	577.4			32.9	0.5		SW			1		10			0.177	4.5	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.93	760.3	30.10	764.5	62.4	16.9	43	SW			3–4		8		SW			Showery	E. Renou.
Toulouse, Observatory	29.70	754.4	30.43	773.0	54.5	12.5	94	W			1		10			0.012	0.3		The Staff.
Tours	30.00	762.1	30.20	767.1	56.5	13.6		W			4		7		SW	0	0		C. Marquet.
Versailles, (near Paris)			30.10	764.4	60.4	15.8	45	W			4		9			0	0	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.15	765.8	30.17	766.4	61.0	16.1	98	N	3.6	1.6		8ck		W		0.299	7.6	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.81	757.2	29.98	761.5	65.3	18.5	54	S			3		0			0	0		Prof. Arndt.
Breslau	29.56	750.9	30.10	764.4	66.9	19.4	40	S			4		0			0	0		Royal University Obs'y.
Carlsruhe	29.69	754.1	30.11	764.9	64.8	18.2	74	SW			4		9			0	0	Light fog	Albert Senz.
Cassel	29.46	748.2	30.07	763.7	64.8	18.2	61	SW			4		7	W		0	0		Dr. H. Möhl.
Crefeld	29.80	756.8	29.96	760.9	62.6	17.0	55	S			6		8			0	0		Director Lose.
Emden	29.82	757.5	29.86	758.4	59.0	15.0	67	SW			7		0			0	0		Prof. Prestel.
Frankfort on the Main	29.76	755.9	30.16	766.0	64.0	17.8	43	SW			4		5			0	0		Physical Society.
Friedrichshafen	28.93	734.7	30.37	771.5	54.7	12.6	79	SW			1		0			0.043	1.1		M. Wilhelm.
Hamburg	29.82	757.4	29.89	759.2	63.7	17.6	69	SSW			6		3c;k	SW		0	0	Fair	Captain F. Hegemann.
Kiel	29.81	757.2	29.83	757.6	61.0	16.1	75	WSW			5		4			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.98	761.5	30.05	763.3	65.8	18.8	61	SW										Clear	Prof. E. Luther.
Köslin			29.91	759.7	66.7	19.3		S			6		0			0	0		H. Müller.
Leipsic, Observatory	29.64	752.9	30.05	763.3	67.6	19.8	47	SSW			3		0			0	0		Prof. Bruhns.
Memel, Naval School	30.04	762.9	30.08	764.1	54.1	12.3	80	S			2		1					Dust-haze	Reinbrechtvon Skalweit.
Neufahrwasser	30.01	762.3	30.03	762.7	63.0	17.2	70	S			4		0			0	0		A. Lothes.
Posen	29.79	756.7	30.08	764.0	65.3	18.5	54	SW			5		0					Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.61	752.2	30.15	765.9	65.8	18.8	48	W			4		10					Raining	Dr. Schur.
Stuttgart	29.17	740.8	30.08	764.1	68.4	20.2	40	W			7		2	W		0.016	0.4	Raining	Prof. Schoder.
Treves, (Trier)	29.48	748.7	30.00	762.0	59.0	15.0	64	W			7		10			0.002	0.04		Prof. Flesch.
Weissenburg, (Bavaria)	28.63	727.1	30.08	764.1	67.8	19.9	34	NW			2		1			0	0		Dr. Von Bebber.
Wustrow, Naval School	29.91	759.7	29.95	760.7	61.0	16.1	69	SSW			4		0					Clear	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.83	757.6	30.21	767.4	64.9	18.3		NE			Strong							Clear	D. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.74	755.3	29.79	756.6	82.9	28.3	75	WSW	35.0?	15.6?			0			0	0	Blue sky	
Deesa	29.39	746.5	29.86	758.5	87.3	30.7	45						0			0	0	Blue sky	
Bombay	29.79	756.6	29.83	757.6	83.9	28.8	75	NW	14.0	6.3			9	NNW		0	0	D. clouds	
Poona	27.79	706.0	29.78	756.4	81.7	27.6	64	E					8			0	0	D. clouds	
Lahore	29.01	736.8	29.74	755.5	83.5	28.6	39	Calm	3.9	1.7			3			0	0	Blue sky	
Belgaum	27.34	694.5	29.89	759.3	74.1	23.4	86	E	5.0	2.2			10	E	E	0.47	11.9	Raining	
Bangalore																			
Roorkee	28.92	734.6	29.82	757.4	82.2	27.9	61	S	2.7	1.2						0	0		
Agra	29.29	744.0	29.85	758.2	86.8	30.4	53	NW								0	0		
Trichinopoly																			
Nagpur	28.83	732.2	29.87	758.8	79.9	26.6	49	Calm	2.6	1.2			6			0	0	D. clouds	
Madras																			
Lucknow	29.48	748.9	29.86	758.3	81.8	27.4	62	Calm	0.3	0.1						0	0	Blue sky	
Allahabad	29.54	750.2	29.85	758.2	77.7	25.4	65	Calm	0.4	0.2			0			0	0	Blue sky	
Patna	29.66	753.5	29.84	758.0	85.6	29.8	47	Calm	0.5	0.2			0			0	0	Blue sky	
Hazaribagh	27.85	707.5	29.87	758.8	76.8	24.9	45	WNW	3.3	1.5			0			0	0	Blue sky	
Cuttack	29.79	756.6	29.87	758.7	82.0	27.8	80	E	2.6	1.2			9			0	0	D. clouds	
Calcutta (Alipore)	29.84	758.0	29.86	758.5	80.9	27.2	87	NNE	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.45	748.0	29.84	758.0	77.8	25.4	63	Calm	1.2	0.5			0			0	0	Blue sky	
Chittagong	29.76	755.9	29.86	758.3	79.9	26.6	74	Calm	0.5	0.2			0			0	0	Blue sky	
Sibsagar	29.55	750.6	29.89	759.2	79.1	26.2	79	E	1.6	0.7			7			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.51	724.2	29.88	759.0	79.0	26.1	66	NE	2.3	1.0						0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.43	569.6	30.36	771.1	37.8	3.2	70	E			1		0			0	0		Ab. Dom. Morgini.
Stelvio	22.43	569.6	30.41	772.3	42.3	5.7		WSW			4		0			0	0		Signora Ernesta Manfredi.
Udine	29.87	758.8	30.29	769.4	58.8	14.9	64	N	0.7	0.3			10			0	0		Prof. Giovanni Clodig.
Padua	30.17	766.3	30.28	769.1	55.8	13.2	84	NW	1.3	0.6			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.08	764.1	30.28	769.1	59.2	15.1	69	SE	1.8	0.8			2			0	0		Conte Alm. Da Schio.
Verona	30.04	763.1	30.27	768.8	69.8	21.0	55	NW			1		0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.24	742.8	30.29	769.3	59.2	15.1	75	NW			4		0			0	0		Prof. Giuseppe Calza
Milan	29.80	757.0	30.34	770.5	61.9	16.6	57	S			2		0			0	0		Ab. Gio. Capelli.
Pavia	29.96	761.0	30.31	769.9	57.7	14.3	73	W			1		9	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.39	746.4	30.30	769.7	60.1	15.6	63	SSW	0.7	0.3			1			0	0		Prof. P. F. Denza.
Mondovi	28.36	720.4	30.30	769.6	59.2	15.1	55	NW			4		1	SSE		0	0		Prof. D. C. Bruno.
Porto Maurizio	30.08	763.9	30.30	769.6	64.0	17.8	85	E			6		2			0	0		Prof. L. Vassallo.
Genoa	30.14	765.6	30.31	769.9	67.1	19.5	54	SE	4.3	1.9			6	SE		0	0		Prof. G. M. Garibaldi
Piacenza	30.04	763.1	30.30	769.7	62.8	17.1	54	NW	4.9	2.2			0			0	0		Dott. G Manzi.
Parma	29.94	760.5	30.28	769.0	66.2	19.0	48	NNW			2		0			0	0		Prof. P. Pigorini.
Florence	30.08	763.9	30.34	770.5	66.6	19.2	56	NW			2		6	SW		0	0		Cav. F Meucci.
Leghorn	30.24	768.0	30.32	770.2	68.7	20.4	64	SSW	1.3	0.6			4	S		0	0		Prof. P. Monte.
Siena	29.10	739.1	30.32	770.1	66.7	19.3	54	SSW	0	0			4	W		0	0		Prof. L. Toscani.
Urbino	28.76	730.4	30.34	770.5	58.6	14.8	84	NE			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.27	768.7	30.32	770.0	57.2	14.0	90	N	29.3	13.1			0			0	0		Prof. Luigi Guidi.
Ancona	30.18	766.5	30.29	769.3	59.7	15.4	85	W			4		3			0	0		Prof. F. DeBosis.
Grosseto	30.20	767.1	30.32	770.0	69.4	20.8	56	SW			2		6	NW		0	0		Avv. P. Ponticelli.
Rome	30.15	765.7	30.32	770.2	68.2	20.1	51	N	0.7	0.3			0			0	0		Prof. P. A Secchi.
Naples, O. U.	30.14	765.5	30.34	770.6	69.8	21.0	70	S			2		2			0	0		Prof. L. Palmieri.
Lecce					65.1	18.4	71	NNW	9.4	4.2			3			0	0		Prof. C. De Giorgi.
Cosenza	29.43	747.5	30.32	770.2	66.2	19.0	46	SE	0	0			0			0	0		Prof. F. D. Conti.
Cagliari	30.01	762.3	30.20	767.1	72.5	22.5	82	SE			4		5	SE		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.27	768.9	30.32	770.1	69.4	20.8	58	SE			2		0			0	0		Prof. F. Cafiero.
Palermo	30.02	762.6	30.28	769.0	67.5	19.7	66	ENE	4.3	1.9			2			0	0		Prof. G. Cacciatore.
Caltanissetta																			Prof. A. Pagani.
Syracuse	30.14	765.6	30.22	767.5	69.6	20.9	57	E			2		3	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.54	750.4	30.10	764.5	66.6	19.2	72	ENE	1.3	0.6			6			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.5 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.04	763.0	30.14	765.6	67.2	14.0	82	NNW	2	0.9			10n					Light rain	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.10	586.8	30.15	765.8	54.7	12.6	71	Calm	0	0		0	0			0	0	Very fine	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft; Mexico, 2,230 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.89	759.3	29.89	759.3	58.8	14.9		SW			6					0	0		
Groningen	29.78	756.4	29.84	757.8	58.6	14.8		SW			5					0	0		
Helder	29.77	756.1	29.77	756.1	57.7	14.3		SSW			5					0.043	1.1		
Hellevoetsluis			29.85	758.3	58.3	14.6	61	SW			7								
Utrecht	29.84	757.8	29.88	759.0	60.1	15.6	58	SSW			5		8			0.004	0.1	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.01	736.8	29.06	738.2	52.5	11.4	88	S	45.6	20.4			5			0.283	7.2	Raining	
Brönö	29.04	737.5	29.08	738.5	45.0	7.2	83	NE	9	4			10			0.866	22.0	Light rain	
Christiania	29.27	743.4	29.41	747.1	52.9	11.6	86	SW	25	11			10			0	0		
Tromsö	29.28	743.7	29.32	744.8	32.4	0.2	100	Calm	0	0			1			0.126	3.2		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.12	765.1	30.32	770.0	61.7	16.5	79	SE	13.7	6.1			7			0.079	2.0		Dr. J. A. Sampaio
Campo Major	29.32	744.8	30.34	770.6	67.1	19.5	33	NNW	11.9	5.3			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.19	766.7	30.26	768.5	76.5	24.7	57	ESE	7.4	3.3			1			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	30.03	762.8	30.39	771.8	63.5	17.5	43	NNE	26.2	11.7			1	W		0.374	9.5		The Staff.
Ponta Delgada, (Azores)	30.26	768.5	30.33	770.3	66.2	19.0	77	ESE	6.3	2.8			3			0.551	14.0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Observer.
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.71	754.7	30.13	765.3	63.5	17.5	57	SSE	9	4			0						Astronomical Obs.
Wilna	29.76	756.0	30.18	766.6	57.6	14.2	68	SSW	2	1			4						Astronomical Obs.
Dorpat	29.84	757.9	30.08	764.0	55.0	12.8	81	SW	7	3			7						Prof. Dr. Weihrauch
St. Petersburg	29.98	761.6	30.00	762.0	50.9	10.5	82	WSW	4	2			10						Central Physical Obs.
Kuopio	29.38	746.3	29.70	754.4	49.8	9.9	92	SW	22	10			10					Raining	Ch. Forsten.
Kieff	29.60	751.7	30.23	767.7	60.1	15.6	60	SSW	7	3			1						Physical Cabinet.
Nikolaiev	30.37	771.5	30.45	773.3	59.0	15.0	68	Calm	0	0			0						Kurdakof.
Kertch	30.47	774.0	30.49	774.5	57.4	14.1	78	N	2	1			4						Lagorio.
Moscow	29.73	755.1	30.29	769.3	49.8	9.9	87	S	4	2			10						Meteorological Obs.
Lugan	30.19	766.9	30.40	772.1	56.7	13.7	51	Calm	0	0			4						Meteorological Obs.
Archangel	29.72	755.0	29.74	755.5	39.2	4.0	80	W	22	10			10						Ogorodnikof.
Tiflis	28.89	733.9	30.31	769.9	59.9	15.5	58	NE	18	8			10						Physical Observatory.
Astrakhan	30.44	773.1	30.35	771.0	49.5	9.7	87	N	9	4			10			Blank	Blank		Sebastianof.
Kasan	29.97	761.3	30.25	768.3	48.2	9.0	55	Calm	0	0			0						Physical Cabinet.
Orenburg	30.19	766.9	30.59	776.9	37.6	3.1		NE	11	5			0						Tschernischei.
Ekaterinburg	29.17	741.0	30.14	765.6	40.6	4.8	62	SW	18	8			7						Meteorological Obs.
Nukuss	30.05	763.3	30.28	769.2	63.1	17.3	44	NNE	2	1			0						
Kasaly																			Bobrof.
Tashkend	28.61	726.7	30.34	770.5	52.7	11.5	92	Calm	0	0			0					Foggy	Michelson.
Barnaul	29.80	756.8	30.33	770.4	42.4	5.8	81	SW	9	4			10						Meteorological Obs.
Yeniseisk	29.57	751.0	29.71	754.7	35.8	2.1	100	S	4	2			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.01	762.2	30.15	765.8	56.7	13.7	64	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					36.0	*2.2	96	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.08	713.2	30.27	768.8	69.6	20.9	49	NE	3.7	1.67		1	3			Inap.	Inap.	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.97	761.3	30.06	763.4	77.1	25.1	90	Calm	0	0		2c;cs	0	SW		1.390	35.3	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.19	766.9	30.29	769.3	74.8	23.8	56	N	9.4	4.20		0	1		NE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.94	760.5	82.8	28.2	81	E	8.5	3.78		3cs	1k	SE	SE	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Low'r 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.48	748.8	29.52	749.8	34.9	1.6	.....	SE	.....	.....	2	.....	10	.....	.....	0.079	2.0	.....	
Umea	29.39	746.6	29.45	747.9	46.8	8.2	92	SW	.....	.....	7	.....	10	.....	.....	0.189	4.8	.....	
Hernosand	29.41	746.9	29.46	748.2	54.0	12.2	82	S	.....	.....	4	.....	3	.....	.....	0.110	2.8	Raining	
Stockholm	29.51	749.5	29.69	754.0	58.6	14.8	87	S	.....	.....	6	.....	0	.....	.....	0	0	.....	
Wisby	29.76	756.0	29.82	757.5	59.0	15.0	64	SW	.....	.....	6	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.58	751.2	29.65	753.1	59.7	15.4	63	S	19.5	8.7	.....	.....	0	.....	.....	0	0	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.82	732.0	30.21	767.2	68.0	20.0	47	S	.....	.....	4	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.58	725.8	30.18	766.6	64.6	17.8	56	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +5.9 mm; Thermometer, +7.0 cent.; Relative Humidity, —25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.28	769.2	59.7	15.4	58	ENE	22	10.0	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.56	776.3	69.1	20.6	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stéfanidès.
Valona	.....	.....	30.30	769.7	64.0	17.8	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'ry	29.81	757.2	29.92	760.0	84.9	29.4	46	SW	.....	.....	2	.....	9kd	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.25	768.3	51	10.6	.....	NE	3	1.3	.....	.....	10s	.....	NE	0.01	0.3	Cloudy	W. R. Bigg.
*Chatham, N. B.	.....	.....	30.10	764.5	46	7.8	98	NW	14	6.3	.....	2ck	0	NW	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.04	763.0	48	8.9	81	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	30.04	763.0	30.24	768.1	49.7	9.8	95	NE	.....	.....	1	10k	0	.....	.....	0	0	Dull	James Smith, M. A.
Dalhousie, N. B.	30.12	765.0	30.15	765.8	.....	.....	.....	W	.....	.....	2	.....	.....	.....	.....	0	0	Clear	H. A. Johnson.
Esquimault, B. C.	30.12	765.0	30.17	766.8	49.1	4.5	100	Calm	.....	.....	.....	5cs	0	.....	.....	0.03	0.8	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.24	768.1	38	3.3	81	W	20	8.9	.....	2c	2s	W	W	0	0	Fair	J. McWilliams.
Fredericton, N. B.	30.15	765.8	30.22	767.6	44.3	6.8	82	NW	9	4.0	.....	6c	0	W	.....	0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.10	764.5	34	1.1	98	W	11	4.9	.....	5k	5n	N	N	0.190	4.83	Cloudy	James Stewart.
Goderich, Ontario	29.43	747.5	30.21	767 3	60.4	15.8	80	SW	.....	.....	1	8k	2s	NW	.....	0.013	0.33	Cloudy	H. J. Strang, M. A
Granton, Ontario	29.13	739.9	30.24	768.1	52	11.1	86	Calm	.....	.....	0	1cs	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S.	29.94	760.5	30.07	763.8	47	8.3	81	W	10	4.5	.....	.....	5ks	.....	N	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.89	759 2	30.26	768.6	57.2	14.0	78	SW	.....	.....	3	4c	0	W	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.64	752.8	29.67	753.6	44	6.7	88	N	.....	.....	4	.....	10n	.....	.....	0.73	18.5	Overcast	E. Weedon.
*Kingston, Ontario	29.92	760.0	30.29	769.4	52	11.1	96	NE	2	0.9	.....	.....	Fog	.....	NE	0.22	5.6	Foggy	S. Woods, M. A
*Montreal, Quebec	30.09	764.3	30.30	769.6	49	9.4	87	NE	6	2.7	.....	.....	10n	.....	.....	0.02	0.5	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.50	749.3	30.11	764.8	55	12.8	99	SE	7	3.1	.....	.....	10n	.....	SE	0.25	6.3	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.50	749.3	30.26	768.6	54.9	12.7	99	Calm	.....	.....	0	.....	Fog	.....	.....	0	0.	Dense fog	J. F. Jeffers, B. A.
Port Dover, Ontario	29.56	750.8	30.25	768.3	55	12.8	100	Calm	0	0	.....	10k	0	NW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.94	760.5	29.99	761.7	40.7	4.8	.....	NW	8	3.6	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.59	751.6	30.24	768.1	50	10.0	96	W	1	0.4	.....	2ck	0	W	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.96	761.0	30.29	769.4	43	6.1	75	NW	10	4.5	.....	2c	5ks	NW	NW	0	0	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.81	757.2	30.28	769.1	50	10.0	89	SE	6	2.7	.....	.....	10s	.....	SE	0.03	0.8	Light rain	W. H. McIntyre.
St. John, N. B.	30.04	763.0	30.21	767.3	44	6.7	84	N	2	0.9	.....	1ck	0	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.45	748.0	30.14	765.5	58	14.4	86	Calm	0	0	.....	.....	10ks	.....	.....	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	30.19	766.8	53	11.7	96	SE	5	2.2	.....	.....	10n	.....	E	0.40	10.2	Threatening	R. J. Cole.
Stratford, Ontario	28.94	735.1	30.22	767.6	52.2	11.2	91	S	4	1.8	.....	2cs	5s	W	.....	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.92	760.0	29.95	760.7	50	10.0	79	SW	8	3.6	.....	2k	8ks	NW	NW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.86	758.4	30.25	768.3	51	10.6	99	NE	2	0.9	.....	5ck	Fog	W	.....	0	0	Foggy	Magnetic Observatory.
Windsor, N. S.	30.00	762.0	30.09	764.3	47.0	8.3	78	NW	7	3.1	.....	3k;cs	0	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	44.0	6.7	92	NE	.....	.....	.....	10ks	10n	.....	.....	1.38	35.1	Showery	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.04	763.0	30.27	768.8	45	7.2	100	Calm	0	0			Fog		Calm	Inap.	Inap.	Foggy	
Alpena, Michigan	29.46	748.3	30.11	764.8	53	11.7	93	SE	2	0.9		5ck	2s	W	SE	0.13	3.3	Fair	
Atlantic City, New Jersey	30.29	769.4	30.31	769.9	59	15.0	87	W	6	2.7		1c	0	NW		0	0	Clear	
Augusta, Georgia	30.16	766.1	30.35	770.9	59	15.0	88	NE	3	1.3		0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	30.28	769.1	30.33	770.4	54	12.2	86	S	1	0.4		Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.27	768.8	30.29	769.4	59	15.0	81	W	7	3.1		5c	Haze	NW	Calm	0	0	Fair	
Bismarck, Dakota	28.36	720.3	30.11	764.8	30	— 1.1	89	W	5	2.2		5cs	0	Calm		0.03	0.8	Fair	
Boise City, Idaho	27.30	693.4	30.01	762.2	33	0.6	79	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	30.11	764.8	30.26	768.6	54	12.2	73	Calm	0	0		1cs	Sm'e			0	0	Smoky	
Brackettville, Texas	28.68	728.5	29.66	753.4	77	25.0	72	SE	7	3.1		8k	2s	SE	Calm	0	0	Cloudy	
Breckenridge, Minnesota	29.07	738.4	30.10	764.5	35	1.7	100	NW	14	6.3			10s		Calm	2.25	57.1	Cloudy	
Brownsville, Texas	29.81	757.2	29.88	758.9	78	25.6	86	SE	4	1.8		0	0			0	0	Clear	
Buffalo, New York	29.53	750.0	30.24	768.1	61	16.1	71	SW	5	2.2		8ck	0	W		0	0	Fair	
Burlington, Vermont	30.02	762.5	30.28	769.1	56	13.3	100	Calm	0	0			Fog			0.07	1.8	Foggy	
Cairo, Illinois	29.87	758.7	30.26	768.6	61	16.1	77	SE	4	1.8		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.67	677.4	30.16	766.1	40	4.4	91	NW				8c	0	Calm		0.03	0.8	Fair	
Campo, California	27.32	693.9	29.89	759.2	42	5.6	75	Calm	0	0			10s		Calm	0.12	3.0	Cloudy	
Cape Hatteras, N. Carolina	30.29	769.4	30.30	769.6	62	16.7	77	NE	2	0.9		0	0			0	0	Clear	
Cape Henry, Virginia	30.30	769.6	30.33	770.4	64	17.8	78	SW	6	2.7		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.35	770.9	30.36	771.1	65	18.3	83	NE	7	3.1		2cs	0	W		0	0	Fair	
Cape May, New Jersey	30.29	769.4	30.32	770.1	61	16.1	88	SW	10	4.5		2c	0	W		0	0	Fair	
Charleston, South Carolina	30.26	768.6	30.33	770.4	65	18.3	89	NE	6	2.7		5c; cs	0	SW; Calm		0	0	Fair	
Cheyenne, Wyoming	24.16	613.6	30.10	764.5	33	0.6	89	S	8	3.6			10s		S	0.01	0.3	Cloudy	
Chicago, Illinois	29.44	747.8	30.12	765.0	64	17.8	78	SW	12	5.4		5k	0	SW		0	0	Fair	
Cincinnati, Ohio	29.60	751.8	30.25	768.3	51	10.6	78	E	2	0.9		0	Fog		E	0	0	Foggy	
Cleveland, Ohio	29.57	751.1	30.30	769.6	54	12.2	73	SE	8	3.6		5ck	0	SE		0	0	Fair	
Concho, Texas					73	22.8	75	S	16	7.2		0	8s			0	0	Cloudy	
Corsicana, Texas	29.50	749.3	29.95	760.7	72	22.2	90	E	8	3.6			10s		E	0.24	6.1	Cloudy	
Davenport, Iowa	29.54	750.3	30.18	766.6	56	13.3	74	NW	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
Denison, Texas	29.20	741.7	29.97	761.2	69	20.6	90	E	13	5.8			10s		E	0.63	16.0	Threatening	
Denver, Colorado	24.90	632.4	30.12	765.0	36	2.2	80	SE	4	1.8			10s		Calm	0.05	1.3	Cloudy	
Detroit, Michigan	29.55	750.6	30.21	767.3	57	13.9	71	S	4	1.8		5cs	Sm'e	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.49	698.2	29.84	757.9	40	4.4	91	N	28	12.5			10n		N	0.04	1.0	Light rain	
Dubuque, Iowa	29.46	748.3	30.17	766.3	52	11.1	72	NW	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
Duluth, Minnesota	29.26	743.2	29.94	760.5	42	5.6	91	NW	11	4.9			10s		SW	1.20	32.8	Cloudy	
Eagle Pass, Texas	29.04	737.6	29.74	755.4	78	25.6	70	SE	8	3.6			10s		S	0	0	Cloudy	
Eastport, Maine	30.13	765.3	30.20	767.1	47	8.3	77	NW	12	5.4		0	0			0	0	Clear	
Erie, Pennsylvania	29.54	750.3	30.24	768.1	60	15.6	66	S	8	3.6		5cs	Sm'e	SW		0	0	Fair	
Escanaba, Michigan	29.36	745.7	30.01	762.2	55	12.8	87	S	1	0.4			10s		Calm	0.23	5.8	Cloudy	
Florence, Arizona	28.31	719.1	29.91	759.7	61	16.1	66	E				5k	0	E		0.40	10.2	Fair	
Fort Bayard, New Mexico	23.92	607.6	29.92	760.0	32	0.0	89	NW	8	3.6		0	0			0.08	2.0	Clear	
Fort Craig, New Mexico	25.40	645.2			46	7.8	92	S	6	2.7		0	5s		S	0.25	6.3	Fair	
Fort Gibson, Indian Ter	29.48	748.8	30.01	762.2	64	17.8	94	E	3	1.3			10s		S	1.86	47.2	Threatening	
Fort Griffin, Texas	28.62	726.9	29.84	757.9	70	21.1	84	SE	12	5.4			10ks		SE	0.03	0.8	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.72	729.5	29.80	756.9	62	16.7	100	NE	13	5.8			10s		SE	2.26	57.4	Cloudy	
Fort Sully, Dakota	28.55	725.2	30.30	769.6	30	— 1.1	89	Calm	0	0		0	0			0.28	7.1	Clear	
Galveston, Texas	29.92	760.0	29.96	761.0	77	25.0	97	SE	9	4.0		2cs	8s	Calm	S	0	0	Cloudy	
Grand Haven, Michigan	29.48	748.8	30.12	765.0	62	16.7	88	S	16	7.2			10s		SW	0	0	Cloudy	
Indianapolis, Indiana	29.48	748.8	30.26	768.6	55	12.8	80	Calm	0	0		0	Sm'e			0	0	Clear	
Indianola, Texas	29.89	759.2	29.92	760.0	78	25.6	90	E	13	5.8		0	8ks		SE	0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.19	766.8	30.22	767.6	74	23.3	68	NE	8	3.6		10cs	0	Calm		0	0	Cloudy	
Keokuk, Iowa	29.54	750.3	30.16	766.1	55	12.8	80	N	6	2.7			10s		Calm	Inap.	Inap.	Cloudy	
Key West, Florida	30.02	762.5	30.05	763.3	79.0	26.1	86	E	8	3.6		5c	0	W		0.06	1.5	Fair	
Kittyhawk, North Carolina	30.36	771.1	30.38	771.6	59	15.0	94	E	3	1.3		0	0			0	0	Clear	
Knoxville, Tennessee	29.37	746.0	30.40	772.1	47	8.3	92	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.39	746.5	30.14	765.5	45	7.2	76	W	8	3.6			10s		W	0.13	3.3	Cloudy	
La Mesilla, New Mexico	25.97	659.6	30.12	765.0	47	8.3	60	Calm	0	0		0	0			0.11	2.8	Clear	
Laredo, Texas					79	26.1	73	S	7	3.1		10k	0	Calm		0	0	Cloudy	
Leavenworth, Kansas	29.32	744.7	30.18	766.6	48	8.9	77	N	9	4.0			10s		Calm	0.20	5.1	Cloudy	
Los Angeles, California	29.54	750.3	29.87	758.7	52	11.1	79	E	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.74	755.4	30.31	769.9	56	13.3	87	Calm	0	0			Fog		Calm	0	0	Dense fog	
Lynchburg, Virginia	29.66	753.4	30.36	771.1	56	13.3	74	Calm	0	0		0	Haze		Calm	0	0	Hazy	
Maricopa Wells, Arizona					45	7.2	24	W				0	0			0	0	Clear	
Marquette, Michigan	29.24	742.7	29.92	760.0	58	14.4	81	S	4	1.8		0	0			0.10	2.5	Clear	
Mason, Texas	28.25	717.5	29.92	760.0	75	23.9	72	SE	16	7.2			10s		S	0	0	Cloudy	
Memphis, Tennessee	29.91	759.7	30.23	767.8	61	16.1	83	SE	4	1.8		1c	Fog	SW	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.43	747.5	30.11	764.8	62	16.7	88	SW	7	3.1		0	5s		SW	0.03	0.8	Fair	
Mobile, Alabama	30.13	765.3	30.18	766.6	69	20.6	79	E	9	4.0		0	0			0	0	Clear	
Montgomery, Alabama	30.04	763.0	30.27	768.8	63	17.2	88	E	10	4.5		2cs	Haze	S	Calm	0	0	Clear	
Morgantown, West Virginia	29.28	743.7	30.35	770.9	52	11.1	73	Calm	0	0		0	Fog			0	0	Fair	
Mt. Washington, N. H.	23.97	608.8	30.33	770.4	37	2.8	100	N	50	22.4			Fog		N	0.10	2.5	Foggy	
Nashville, Tennessee	29.78	756.4	30.32	770.1	57	13.9	87	E	1	0.4		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.15	765.8	30.27	768.8	56	13.3	87	Calm	0	0		Haze	Fog		Calm	0	0	Fair	
New London, Connecticut	30.22	767.6	30.27	768.8	52	11.1	86	N	4	1.8		2cs	Fog	W	Calm	0	0	Fair	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	74	23.3	90	E	12	5.4		7k	1ks	SE	SE	0	0	Fair	
Newport, Rhode Island	30.22	767.6	30.27	768.8	55	12.8	87	NW	3	1.3		7c	0	W		0	0	Fair	
New York, New York	30.11	764.8	30.29	769.4	56	13.3	93	W	5	2.2		0	Fog		Calm	0	0	Foggy	
Norfolk, Virginia	30.31	769.9	30.37	771.4	57	13.9	90	S	4	1.8		1c	Haze	Calm	Calm	0	0	Clear	
North Platte, Nebraska	27.32	693.9	30.01	762.2	32	0.0	89	NW	6	2.7			10s		NW	0	0	Cloudy	
Olympia, Washington Ter.	30.15	765.8	30.19	766.8	39	3.9	100	S	2	0.9			Fog		S	0	0	Dense fog	
Omaha, Nebraska	29.10	739.1	30.21	767.3	40	4.4	82	NW	3	1.3			10s		Calm	0	0	Cloudy	
Oswego, New York	29.93	760.2	30.26	768.6	52	11.1	86	SE	2	0.9		5ck	0	NW		0	0	Fair	
Pembina, Dakota	29.28	743.7	30.14	765.5	33	0.6	90	NW	15	6.7			10s		Calm	0.18	4.6	Cloudy	
Philadelphia, Pennsylvania	30.27	768.8	30.32	770.1	53	11.7	93	SW	10	4.5		0	Fog		Calm	0	0	Foggy	
Phœnix, Arizona					51	10.6	72	E				0	0			Inap.	Inap.	Clear	
Pike's Peak, Colorado	17.73	450.3	29.94	760.5	18	— 7.8	100	Calm	0	0			10n		Calm	0.44	11.2	Light snow	
Pioche, Nevada	23.99	609.3	29.76	755.9	37	2.8	62	N	9	4.0		0	8s		N	0	0	Cloudy	
Pittsburg, Pennsylvania	29.50	749.3	30.34	770.6	48	8.9	92	Calm	0	0			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.53	750.0	30.19	766.8	58	14.4	76	S	6	2.7		8ck	Sm'e	W		0	0	Cloudy	
Portland, Maine	30.21	767.3	30.26	768.6	54	12.2	73	NE	4	1.8		10k	Haze	NW		Inap.	Inap.	Cloudy	
Portland, Oregon	30.14	765.5	30.24	768.1	46	7.8	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.66	626.4	30.02	762.5	35	1.7	70	Calm	0	0		2cs	0	Calm		0.20	5.1	Fair	
Punta Rassa, Florida	30.09	764.3	30.10	764.5	75	23.9	81	NE	16	7.2			10ks		Calm	0.06	1.5	Cloudy	
Red Bluff, California	29.66	753.4	30.02	762.5	54	12.2	43	N	8	3.6		0	0			0	0	Clear	
Rochester, New York	29.63	752.6	30.24	768.1	55	12.8	68	W	6	2.7		2ck	0	W		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.64	752.8	30.23	767.8	41	5.0	100	N	1	0.4			Fog		Calm	0	0	Foggy	
Sacramento, California	29.86	758.4	29.94	760.5	51	10.6	40	N	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.63	752.6	30.19	766.8	63	17.2	83	S	12	5.4			10s		Calm	0	0	Cloudy	
St. Marks, Florida	30.19	766.8	30.21	767.3	69	20.6	79	NE	6	2.7		5k	0	E		0	0	Fair	
St. Paul, Minnesota	29.22	742.2	30.06	763.5	42	5.6	74	SW	12	5.4			10s		Calm	0.13	3.3	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.63	651.0	29.96	761.0	44	6.7	51	N	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.19	741.4	29.75	755.6	75	23.9	90	SE	7	3.1			10ks		SE	0.03	0.8	Cloudy	
San Diego, California	29.86	758.4	29.93	760.2	59	15.0	81	NE	3	1.3		0	0			0.78	19.8	Clear	
Sandusky, Ohio	29.59	751.6	30.26	768.6	57	13.9	69	SW	10	4.5		1ck	Sm'e	Calm	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.26	768.6	30.28	769.1	58	14.4	93	W	7	3.1		2c	Haze	SW		0	0	Fair	
San Francisco, California	29.88	758.9	29.94	760.5	59	15.0	54	SW	8	3.6		0	0			0	0	Clear	
Santa Fé, New Mexico	23.14	587.8	29.68	753.9	48	8.9	62	SE	12	5.4			10s		SE	0.79	20.1	Threatening	
Savannah, Georgia	30.22	767.6	30.31	769.9	65	18.3	89	NE	4	1.8		2cs	5s	SW	E	0	0	Fair	
Shreveport, Louisiana	29.86	758.4	30.07	763.8	70	21.1	85	E	5	2.2		0	0			0	0	Clear	
Smithville, North Carolina	30.32	770.1	30.36	771.1	64	17.8	94	N	5	2.2		1c	0	W		0	0	Clear	
Springfield, Massachusetts	30.08	764.0	30.21	767.3	47	8.3	92	Calm	0	0			Fog		Calm	0	0	Foggy	
Stanwix, Arizona																			
Stockton, Texas	26.80	680.7	29.80	756.9	70	21.1	84	SW	16	7.2		0	8s		SW	0	0	Fair	
Thatcher's Island, Mass.	30.21	767.3	30.36	771.1	55	12.8	87	Calm	0	0		1c	0	N		0	0	Clear	
Toledo, Ohio	29.55	750.6	30.22	767.6	58	14.4	64	S	2	0.9		2cs	Haze	NW	Calm	0	0	Fair	
Tucson, Arizona	27.38	695.4	29.93	760.2	67	19.4	70	Calm				0	0			0.46	11.7	Clear	
Tybee Island, Georgia	30.25	768.3	30.28	769.1	70	21.1	84	NE	16	7.2		8cs	0	E		0	0	Fair	
Umatilla, Oregon	29.87	758.7			35	1.7	90	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.91	759.7	30.17	766.3	65	18.3	83	SE	7	3.1		0	0			0	0	Clear	
Virginia City, Montana	24.38	619.2	29.86	758.4	26	—3.3	76	NW	1	0.4		0	0			0	0	Clear	
Visalia, California	29.60	751.8	29.97	761.2	49	9.4	77	E	2	0.9		0	0			0	0	Clear	
Washington, D. C.	30.22	767.6	30.34	770.6	52.5	11.4	89	Calm	0	0		2c	Sm'e	W		0	0	Dense smoke	
Wickenburg, Arizona					42	5.6	42	NE				0	0			Blank	Blank	Clear	
Wilmington, N. Carolina	30.29	769.4	30.37	771.4	58	14.4	87	NE	2	0.9		0	Fog		Calm	0	0	Clear	
Winnemucca, Nevada	25.73	653.5	30.09	764.3	29	—1.7	67	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Mass.	30.22	767.6	30.27	768.8	60	15.6	82	N	2	0.9		5c	0	NW		0	0	Fair	
Yankton, Dakota	28.96	735.6	30.30	769.6	37	2.8	81	NW	12	5.4			10s		Calm	0.08	2.0	Cloudy	
Yuma, Arizona	29.70	754.4	29.87	758.7	55	12.8	44	NE	2	0.9		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.13	765.3	30.18	766.6	22.0	—5.6	93	SW	9	4.0		1k	1s	SW	SW	Inap.	Inap.	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	79	26.1	90	SE	3.6	1.6		8c	0	SW		1.01	25.7	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	82	27.8	83	Calm	0	0		8c	0	Calm		0	0		James Gall.
Navassa, W. I.	29.88	758.9	29.96	761.0	83.5	28.6		E			3					0.07	1.8	Cloudy	F. M. Everett.
St. Thomas, W. I.					83	28.3	71	NE	3.5	1.6		2c	4k		SE				G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.82	757.4	29.84	757.9	82	27.8	91	SE				2k	5ks		SE				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.04	763.0	83	28.3	79	E			2	5k	6ks	E		0	0	½ Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.25	641.3			67.0	19.4	75	Calm			0	0	3ks			0.01	0.3	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,675 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.93 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.94	760.5	58	14 4	64	17.8	21	N	16	7.2			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.28	769.1			72	22.2	76	NE	19	8.5			6		ESE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.20	767.1	61	16.1	50	10.0	87	SE			1					0	0			Bright	
Naval Hospital, Yokohama, Japan	30.04	763 0	62.5	16.9	57 5	14.2	97	NNE			3		10n		NE	0.50	12.7			Raining	
Adams, Buenos Ayres	29.88†	761.5†	60	15 6	60	15.6	76	SW			3		1		S	0	0			D. clouds	
Alert, Peter the Great Bay, Russia	30.20†	767.1†	55	12.8	55	12.8	87	WSW			3		2		SW			Smooth		D clouds	
Alliance, Constantinople, Turkey.	30.37	771.4	64	17.8	63	17.2	57	N&E			3–4		4		N&E					Pleasant	
Ashuelot, Tientsin, China	30.23	767 8	70	21.1	55	12.8	68	SSW			2		1		Calm					Clear	
Canonicus, New Orleans, La	30.10	764.5	54	12.2	74	23.3	90	E			3		7		E					Cloudy	
Colorado, New York, N. Y.	30.35	770.0	68	20.0	60	15.6	82	WSW	2	0.9			6		W	0	0			Light fog	
Despatch, Constantinople, Turkey.	30.43	772.9	79	26.1	64	17.8	62	ENE			4		6		NE						
Franklin, Norfolk, Va	30.42	772.7	57	13.9	60	15.6	??	W	6	2.7			4		W	0	0				
Frolic, N. 27° 29′, W. 76° 29′	30.30	769.6	77	25.0	78	25.6	95	ENE			5		10n		N&E	Blank	Blank	Heavy	N&E	Squally	
Gettysburg, Naples, Italy	30.14‡	765.5‡			74	23.3	95	Calm			0		0			0	0			Hazy	
Kearsarge, N. 7° 24′, E. 75° 45′	29.97	761.2			81	27.2	??	S			2		9		S&W	0.41	10.4	Smooth		Showery	
Lackawana, Esquimault, B. C.	30.20	767.1			45	7.2	84	Calm			0		6							D. clouds	
Marion, Smyrna, Turkey	30.10	764.5	68	20.0	68	20.0	38	NE			6		2		NE	0	0	Moderate.	NE	D. clouds	
Michigan, Chicago, Ill	29.65	753.1	67	19.4	63	17.2	83	SSW			2		2		SW					Fair	
Monocacy, Yokohama, Japan	30.04	763.0	62	16.7	68	20.0	51	N			2		0			0	0	Smooth		D. clouds	
Monongahela, N. 37° 03′, W. 36° 46′	29.97	761.2	70	21.1	70	21.1	80	S			6–8		kn			Light	Light	Rough	S&W	Raining	
New Hampshire, Port Royal, S. C	30.48	774.2			67	19.4	84	NE	13	5.8			6		SE	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.20	767.1	61.5	16.4	61.5	16.4	68	NW	1	0.4			0			0	0	Smooth		D. clouds	
Onward, Callao, Peru	30.06†	763.5†	70	21.1	69	20.6	85	SE			1		10					Long	W	Hazy	
Ossipee, Boston, Mass	30.33	770.4	78	25.6	56	13.3	81	NNW			1									Foggy	
Palos, Shanghai, China	30.18	766.6	66	18.9	63	17.2	94	N			1		8		N	Blank	Blank			Clearing	
Pensacola, Mare Island, Cal	30.03	762 7			65	18.3	94	NNW			3		0			0	0			Clear	
Plymouth, Norfolk, Va	30.63	778.0	64	17.8	60	15.6	95	S			0–1		0							Clear	
Ranger, N. 31° 0′, E. 122° 45′	30.32	770.1			67	19.4	84	NW			1		3		N	0	0	Light	NW	Pleasant	
Rio Bravo, Brownsville, Texas	29.78	756.4			77	25.0	95	SE			1		1		Calm					D. clouds	
Santee, Annapolis, Md	30.38	771.6	64	17.8	59	15.0	82	Calm			0		3			0	0			Clear	
St. Louis, League Island, Pa	30.16	766.1	53	11.7	54	12.2	87	SW	2	0.9						0	0			Foggy	
Tennessee, Yokohama, Japan	30.04	763.0	65	18.3	59	15.0	82	N	8	3.6			10			0.45	11.4	Smooth		Raining	
Trenton, Marseilles, France	30.31	769.9	70	21.1	68	20.0	70	SE	15	6.7			9		S&E	0	0			D. clouds	
Vandalia, N. 43° 11′, E. 9° 17′	30.37	771.4	71	21.7	70	21.1	75	SE			0–1		0							Blue sky	
Wabash, Boston, Mass	30.28	769.1	58	14.4	55	12 8	87	W	1	0.4			4		Calm	0	0			Hazy	
Wyoming, Washington, D. C.	30.71†	780.0†	64	17.8	64	17.8		Calm			0		1							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.09*	764.3*	77	25.0	86	E			4		7		SE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio, N. 37° 21′, W. 137° 16′			30.40†	772.1†	67	19.4		SSW			3		10		SSE	Long	WSW	Overcast	Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *It is not known that the barometer is corrected for temperature, instrumental errror or elevation. †Aneriod; instrumental error not known.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic,																			Capt. John Metcalf.
S. S. Gaelic N. 44° 49′, E. 152° 47′			30.17*	766.3*	60	15.6	??	E			4		n;c		SW	Long	N	Overcast	Capt. W. H. Kidley.
S. S. Oceanic, N. 30° 13′, E. 147° 56′			29.95	760.7	77	25.0	82	Var.			1		4		Calm	Moderate	N	D clouds	Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsc.
S. S. Nürnberg, N. 49° 19′, W. 11° 17′			30.08	764.0	57.0	13.9	75	W			8		k		WNW	Heavy	W	Squally	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Sea-swell		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			30.00*	762.0*	50	10.0		ESE			7		6		WNW				Captain Sargent.
S. S. Ohio, N. 50° 08′, W. 37° 34′			29.84	757.9	52.5	11.4	93	SE			7		10		SE	Large	SE	Stormy	Captain Morrison.
S. S. Pennsylvania, N 42° 02′ W. 52° 02′			29.62†	752.3†	55	12.8	100	N			6		8		NNW	Large	Var.	Squally	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 01′, W. 79° 20′			30.29	769.4	76	24.4	60	E	11	4.9		5cs	2ks	S		Swell	NE	Clear	Capt. James Jorgensen.

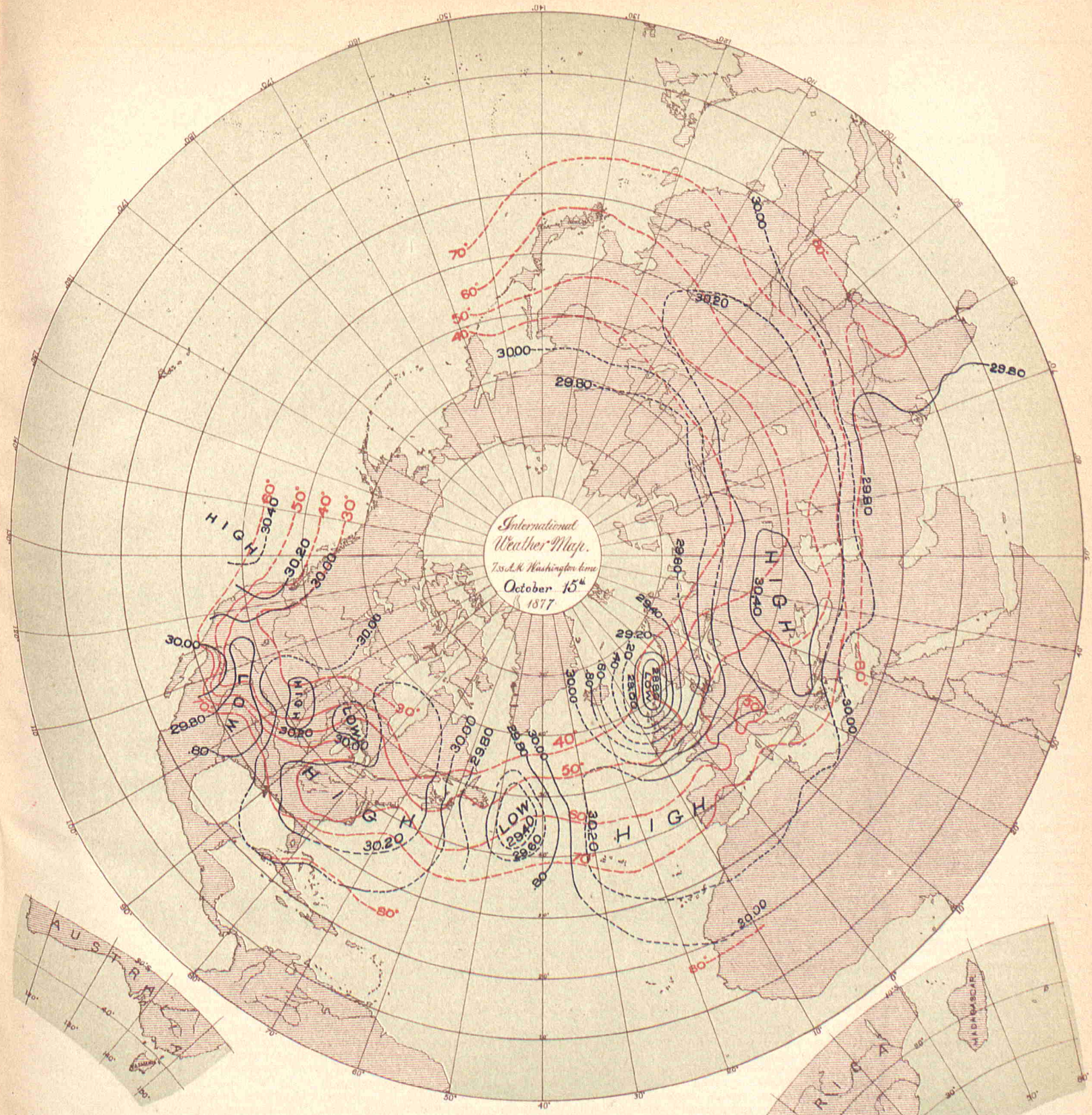
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 16, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.33	770.4	74.3	23.5	68	NE			1		1			0	0	Very fair	Michel.
Algiers			30.30	769.6	69.1	20.6	78	NE			1		6			0	0	Cloudy	Peter.
La Calle			30.28	769.0	70.7	21.5	80	NW			3		7			0	0	Very cloudy	Fleury.
Tunis			30.21	767.4	76.5	24.7	59	NW			4		5			0	0	Cloudy	Jacques.
Sfax			30.26	768.5												0	0		Husson.
Saida			30.31	769.8	66.9	19.4	50	N			2		1			0	0	Very fair	Millot.
Tebessa			30.26	768.7				NW			3		3			0	0	Pretty fair	Bourgeois.
Geriville			30.25	768.4	68.5	20.3	32	NNE			2		2			0	0	Fair	Lemaillot.
Laghouat			30.26	768.6	73.4	23.0	52	W			2		0			0	0	Clear	François.
Biskra			30.41	772.4	84.0	28.9	26	NW			1		4			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.57	751.0	30.11	764.8	61.9	16.6	58	SW			4		7			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.38	746.3	30.15	765.8	54.7	12.6	77	W			2		10			0.146	3.7		Dr. Wierzbiski.
Eperies	29.18	741.2	30.05	763.3	60.8	16.0	48	Calm			0		2cs			0	0		Julius Mikolik.
Gratz	28.90	734.0	30.18	766.6	53.8	12.1	53	NW			5		10			0	0		Andreas Rosplni.
Hermannstadt	28.61	726.6	30.00	762.1	61.3	16.3	58	SE			1		0			0	0		Prof. Reissenberger.
Kremsmünster	28.92	734.6	30.28	769.2	49.6	9.8	82	W			3		10			0	0		Prof. C. Wagner.
Lemberg	29.02	737.1	29.99	761.8	60.1	15 6	61	NW			1		0			0	0		Dr. T. Stanecki.
Pola	29.95	760.6	30.06	763.5	63.5	17.5	63	WNW			3		2ks			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin																			Karl Stancel.
Trieste	29.78	756.5	30.06	763.5	62.6	17.0	59	S			1		0			0	0		P. Busin.
Vienna	30.01	762.2	30.11	764.8	61.0	16.1	88	Calm			0		2			0	0		I.R. Central Met.Obs'y.
	29.54	750.2	30.24	768.1	53.4	11.9	79	WNW			2		10			0	0		

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.68	728.5	30.21	767.4	47.8	8.8	64	SSW			4		10			0.437	11.1		Royal Observatory.
Brussels	29.92	760.0	30.13	765.2	46.0	7.8	90	SW			5		9		WSW	0.364	9.25		
Furnes	30.04	762.9	30.06	763.5	50.2	10.1	82	SSW			4		9			0.421	10.7		
Maeseyck	30.01	762.2	30.14	765.5	46.8	8.2	93	SW			6		10			0.138	3.5		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.91	759.7	30.02	762.5	39.1	3.9		W	23	10.3			2			0.075	1.91	Blue sky	W. Boswell.
Ardrossan	30.12	765.0	30.14	765.5	39	3.9		NW			4		8					Snowing	William McNeil.
Armagh, Observatory			30.26	768.6	45.3	7.4		WNW	8	3.6			3					D. clouds	S. Cull, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.17	766.3	46.3	7.9		NW	22	9.8			7					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			30.32	770.1	48.1	8.9		NW			1		2					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.64	752.8	30.05	763.3	44.5	6.9		W			1		10			0.55	14.0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	84	28.9		NE			1		2					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.11	764.8	48.1	8.9		N			1		10					Overcast	H. Todd.
Cardington			30.14	765.5	47.0	8.3		NW			2		10					Overcast	John McLaren.
Chatham, School M. E.	29.98	761.5	30.11	764.8	48.2	9.0		N			2		10					Threatening	Lt. Col. C. M. Martin, R. E.
Dartmoor	28.79	731.3	30.29	769.4	45.0	7.2		NW			3		6					Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.17	766.3	30.20	767.1	46	7.8		W			4		5					D. clouds	J. Mac Gowan.
Dover	30.06	763.5	30.09	764.3	51	10.6		NW			3		2					¾ clouded	J. Costello.
Eccles, (near Manchester)			30.15	765.8	46.5	8.1		NW	9.2	4.1			6					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.06	763.5	30.30	769.6	51.5	10.8		WNW			4		3					D. clouds	The Staff.
Fort Napier, (Natal)	27.75	704.8	29.95	760.7	74.1	23.4		E			3		3					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.85	758.2	85.0	29.4		N			0		3					D. clouds	
Galway, Queen's College					58	14.4		NW			4		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.25	768.3	30.30	769.6	69.3	20.7		E			6		9					Overcast	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.94	760.5	30.14	765.5	38.0	3.3		W			5		6					D. clouds	D. G. Maclean.
Great Yarmouth	30.04	763.0	30.05	763.3	50	10.0		NW			4		6					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.95	760.7	30.13	765.3	43.0	6.1		NNW			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	30.01	762.2	30.23	767.8	54.5	12.5		WNW			6		5					Squally	Dr. S. E. Hoskins, F. R. S.
Helston			30.28	769.1	53	11.7		NW			4		3			0.2	5.	D. clouds	M. P. Moyle.
Holyhead	30.18	766.6	30.23	767.8	46	7.8		WNW			5		2					Blue sky	John Tilston.
Jersey	29.97	761.2	30.27	768.8	54.0	12.2		W			6		6			Blank	Blank	Squally	J. Fisher.
Kew, Observatory			30.15	765.8	45.1	7.3		NW	9	4.0			10					Raining	The Staff.
Kingstown	30.23	767.8	30.26	768.6	46	7.8		WNW			4		2					Blue sky	George Mitchell.
Leicester, Museum			30.14	765.5	45.6	7.6		W			2		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.98	761.5	30.06	763.5	70.4	21.3		N			2		4					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.92	760.0	30.01	762.2	37	2.8		NW			2		2					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.02	762.5	81	27.2		NE			2		6					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.95	760.7	30.15	765.8	46.7	8.2		WNW			4		10ck;k		W	0.248	6.30	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.62	752.3	30.16	766.1	41.2	5.1		W			3		10			Blank	Blank	Misty	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.16	766.1	44	6.7		NW			2		10					Raining	F. Lucas
Plymouth	30.17	766.3	30.24	768.1	53.5	11.9		NW			4		2					D. clouds	John Merrifield.
Roche's Point	30.28	769.1	30.30	769.6	48	8.9		NW			3		8			Blank	Blank	¾ clouded	W. Kennedy.
Saint Ann's Head	30.10	764.5	30.26	768.6	49	9.4		NW			4		4						John C. Walker.
Sandwick Manse, (Orkneys)			29.90	759.4	35	1.7		NW	32	14.3			6					Rain & snow	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.94	760.5	59.8	15.4		NE			2		9					Showery	Sergt. W. H. Lyne.
Sheffield	29.89	759.2	30.13	765.3	46.8	8.2		N			2		8			0.08	2.0	Misty	W. F. Cooper.
Silloth Rectory	30.11	764.8	30.14	765.5	50.5	10.3	63	NW			2		2			0.060	1.52	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					44.3	6.8		NW			1		8					D. clouds	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.99	761.7	36	2.2		NW			6		8					Snow & hail	John Smith.
Stratfield Turgiss	29.92	760.0	30.14	765.5	46.6	8.1		NW			1		10					Raining	Rev. C. H. Griffith, F. M. S.
Thurso			29.91	759.7	35	1.7		WNW			5		10					Snowing	John Trotter.
Truro, Royal Institution			30.31	769.9	55	12.8		S			6		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.35	770.9	47.9	8.8		N	4	1.8			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					45	7.2		NW			7		5			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.90	759.4	29.94	760.5	70.0	21.1	65	WNW	22	9.8		0	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.00	762.0	48.0	8.9	81	SW			2		5k			0.01	0.3		Francis Abbott, F. R. A. S.
Leith, Restalrig Park			30.11	764.8	43.2	6.2		W			2		6ck			0.03	0.8	Fine	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.3	75.6	24.2	67	E	9.5	4.2		8	2			0.11	2.8	Cloudy	C. Meldrum.
Melbourne, Observatory	30.00	762.0	30.09	764.3	47.7	8.7	89	NE	7	3.1			4			0	0	Fine	R. L. J. Ellery.
Monach Lighthouse, (Hebrides)			30.10	764.5	43	6.1		NW			7	5	5	NW		0.7	18.		J. Youngclause.
North Unst, (Shetland Is.)			29.71	754.6	35	1.7		NW			8	5	7	NW		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria, N. 47° 20′, W. 38° 6′			29.15	740.4	57	13.9		WSW			5		5			15*	S;NE	D clouds	Capt. W. Watson.
S. S. Batavia, S. 42° 20′, W. 53° 15′			29.72	754.9	53	11.7		WNW			6		7			7	WNW	Showery	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 42° 5′, W. 58° 15′			29.90	759.4	53	11.7		NNW			5		6			6	NNE; WNW	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 26′			29.35	745.5	56	13.3		ESE			7		10			9	SW; Confused	Raining	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 48° 25′, W. 22° 10′			30.15	765.8	59	15.0		SSE			6		9			5	NNE; SW	D clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0			68.9	20.5	91	SE			1		2cs;ks;kd		E	0.1	3.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.78	756.5	29.83	757.7	48.7	9.3	76	SW			4		9					Raining	
Fanöe	29.70	754.3	29.72	754.8	46.6	8.1	83	WNW			6		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)	30.05	763.3	30.10	764.4	29.7	— 1.3	96	E			4		8						
Thorshavn, (Faröe)	29.84	757.8	29.87	758.7	29.7	— 1.4	78	N			5		7					Snowing	
Vestervig	29.55	750.6	29.72	754.9	44.8	7.1	90	NW			2		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.80	757.0	30.36	771.0	57.2	14	72	SW			1		5		SW	0	.0	Cloudy	Collignon, Director.
Amiens, Normal School	30.07	763.6	30.17	766.4	52.9	11.6	78	SW			2		5		W	0.055	1.4	Cloudy	Bouvarne, Director.
Avignon, Normal School	30.25	768.4	30.33	770.4	62.2	16.8	37	N			6		0			0.047	1.2	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.74	755.4	30.31	769.8	57.0	13.9	47	SW			4		8		WSW	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.08	763.9	30.24	768.0	58.3	14.6	63	SW	11.2	5.0			10		SW	0.083	2.1	Raining	Albert Cheux.
Beauvais	29.93	760.3	30.22	767.6	51.3	10.7	72	SW			3		5		W	0	0	Cloudy	Normal School.
Besançon	29.51	749.6	30.42	772.6	54.7	12.6	66	S			6		5		SW	0.075	1.9	Cloudy	Normal School.
Bourg-en-Bresse	29.48	748.7	30.40	772.2	53.4	11.9	63	NE			1	5c		E		0.228	5.8	Cloudy	Normal School.
Bourges, Normal School	29.83	757.6	30.38	771.7	56.1	13.4	75	WSW			2		5		NW	0.08	2.	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.06	763.5	30.28	769.1	57.0	13.9	66	W			4		5		W	0.098	2.50	Squally	The Staff.
Carcassonne, Normal School	30.02	762.6	30.44	773.1	61.7	16.5	55	E			6		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.17	766.3	30.24	768.2	54.5	12.5	74	NE			2		8		NE	0	0	Very cloudy	Normal School.
Chartres, Normal School	29.64	752.9	30.21	767.4	56.8	13.8	71	SW			6		5			0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.92	760.0	30.24	768.2	55.4	13.0	70	SW			4		10ck			0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	29.92	737.1	30.38	771.6	59.0	15.0	48	W			3		5		W	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.41	746.9	30.29	769.4	52.3	11.3	57	SW			6		1k		SW	0.024	0.6	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.16	740.7	30.30	769.7	59.2	15.1	39	NW			6		0			0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.18	766.6	30.39	772.0	60.4	15.8	56	W			2		8		SW	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	30.05	763.3	30.36	771.2	52.3	11.8	80	NW			4		8		W	0.08	2.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.50	749.2	30.43	773.0	52.7	11.5	56	SW			4		5		E	0.20	5.	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.25	768.4	30.35	770.9	59.7	15.4	64	W			5		5		W	0.079	2.0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.73	755.1	30.43	772.9	55.8	13.2	84	Calm			0		5		W	0.150	3.8	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.23	742.5	30.30	769.6	49.1	9.5	64	SW			2		2		NE	0	0	Slightly cov.	Normal School
Nismes, Normal School	30.10	764.5	30.30	769.6	63.0	17.2	65	W			4		0			0	0	Clear.	Boyer, Director.
Orleans, Normal School	30.05	763.3	30.43	772.9	55.4	13	61	SW			6		8		W	0.016	0.4	Very cloudy	Bernard, Director.
Paris, Observatory	30.01	762.3	30.26	768.5	46.9	8.3	89	SW			2		10			0.098	2.49	Raining	National Observatory.
Privas	29.30	744.3	30.38	771.6	57.9	14.4	55	N			2		2		N	0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.45?	773.5?	30.45?	773.3?	62.2	16.8	70	W			5		10		WNW	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	30.14	765.5	30.23	767.7	52.2	11.2	74	WNW			2		5		SW	0.217	5.5	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.13	739.9	30.20	767.1	63.5	17.5	53	SW			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.74	755.4	30.42	772.7	58.1	14.5	78	ESE			1		8		Calm	0.102	2.6	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.81	757.1	84.2	29										0	0		L'Abbé Marchést.
Marseilles, Observatory			30.25	768.3	61.9	16.6	30	NW			6		0			0	0	Clear	The Staff.
Mont-Louis	25.18	639.5	30.49	774.5	48.4	9.2	38	NW	9.3	4.17			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.97	761.1	30.24	768.1	46.6	8.1	94	W			3		10			0.122	3.1	Raining	Marié Davy, Director.
Perpignan			30.42	772.7	61.5	16.4	42	N	22.4	10.00			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.51	546.4			37.4	3.0		SW			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.80	579.0			40.6	4.8		SW			2		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.08	764.1	30.25	768.3	51.8	11.0	74	W			3		10		W	0.091	2.3	Covered	E. Renou.
Toulouse, Observatory	29.79	756.6	30.52	775.2	57.6	14.2	59	NW			2		8			0	0		The Staff.
Tours	30.08	764.0	30.28	769.0	60.8	16.0		W			5		3		W	0.024	0.6		C. Marquet.
Versailles, (near Paris)			30.25	768.4	47.1	8.4	86	WNW			1		10			0.126	3.21	Raining	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.18	766.6	30.21	767.2	58.8	14.9	90	ENE	4.9	2.2			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.3 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.95	760.7	30.12	765.0	56.8	13.8	57	S			4		6			0	0		Prof. Arndt.
Breslau	29.66	753.4	30.20	767.0	51.8	11.0	72	W			1		10			Inap.	Inap.	Sprinkling	Royal University Obs'y.
Carlsruhe	29.84	757.8	30.27	768.8	55.0	12.8	52	SW			4		5			0.291	7.4		Albert Senz.
Cassel	29.62	752.4	30.23	767.9	54.0	12.2	52	WSW			6		7	WSW		0.240	6.10		Dr. H. Möhl.
Crefeld	29.95	760.7	30.11	764.8	47.3	8.5	83	SW			6		8					Raining	Director Lose.
Emden	29.97	761.3	30.01	762.2	46.9	8.3	93	W			6		10			0	0		Prof. Prestel.
Frankfort on the Main	29.88	758.9	30.24	768.2	53.6	12.0	42	SSW			4		4			0	0		Physical Society.
Friedrichshafen	28.85	732.2	30.30	769.6	53.1	11.7	62	SW					2	WNW		0.091	2.3		M. Wilhelm.
Hamburg	29.89	759.2	29.96	761.0	51.4	10.8	70	SW			7		8kn			0.004	0.1	Squally	Captain F. Hegemann.
Kiel	29.84	757.9	29.86	758.4	49.5	9.7	78	SW			6		2			0.030	0.76		Prof. G. Karsten.
Königsberg, (Prussia)	29.94	760.5	30.01	762.2	53.6	12.0	76	W										Fair	Prof. E. Luther.
Köslin			30.01	762.3	48.7	9.3		SW			2		2			0	0		H. Müller.
Leipsic, Observatory	29.79	756.7	30.22	767.5	54.7	12.6	50	WSW			4		5	WSW		0	0		Prof. Bruhns.
Memel, Naval School	29.95	760.7	30.00	761.9	52.0	11.1	86	WNW			1		5ck	SSW					Reinbrechtvon Skalweit.
Neufahrwasser	30.03	762.7	30.04	763.1	53.6	12.0	73	NW			1		10			0	0		A. Lothes.
Posen	29.89	759.2	30.18	766.6	55.0	12.8	70	S			2		10			0.024	0.6	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.76	756.0	30.32	770.1	55.6	13.1	42	SW			4		3	W		0.034	0.87		Dr. Schur.
Stuttgart	29.34	745.1	30.29	769.3	54.0	12.2	41	W			2		5	W		0.083	2.1	Raining	Prof. Schoder.
Treves, (Trier)	29.31	744.4	29.83	757.6	53.2	11.8	50	WSW			8		8			0.295	7.51		Prof. Flesch.
Weissenburg, (Bavaria)	28.73	729.8	30.26	768.5	52.7	11.5	43	WSW			2		6k		W	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.97	761.2	30.01	762.2	52.0	11.1	58	SSW			7		0					Clear	E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.63	752.5	30.02	762.4	65.7	18.7		NE										Clear	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.80	757.0	29.86	758.3	85.1	29.5	35	WSW	15.0?	6.7?			0			0	0	Blue sky	
Deesa	29.44	747.7	29.91	759.7	86.2	30.1	49	S					0			0	0	Blue sky	
Bombay	29.81	757.1	29.84	758.0	85.3	29.6	75	NW	9.0	4.0			10	NW		0	0	Overcast	
Poona	27.81	706.4	29.80	757.0	81.0	27.2	67	NE					10	E		0	0	D. clouds	
Lahore	29.07	738.4	29.81	757.2	83.0	28.3	43	E	4.3	1.9			6			0	0	Dust-whirl	
Belgaum	27.35	694.6	29.92	759.9	70.7	21.5	91	E	16.0	7.2			10		E	0.52	13.2	Raining	
Bangalore																			
Roorkee	28.96	735.7	29.86	758.4	82.8	28.2	52	Calm	1.0	0.4			6			0	0		
Agra	29.30	744.2	29.86	758.4	87.3	30.7	47	W								0	0		
Trichinopoly																			
Nagpur	28.84	732.6	29.88	759.0	80.9	27.2	52	NE	2.9	1.3			2			0	0	Blue sky	
Madras																			
Lucknow	29.50	749.3	29.87	758.7	84.3	29.1	57	Calm	0.5	0.2						0	0	Blue sky	
Allahabad	29.55	750.7	29.86	758.6	81.4	27.4	62	Calm	0.5	0.2			0			0	0	Blue sky	
Patna	29.69	754.0	29.87	758.6	85.2	29.6	51	W	0.9	0.4			5	W	W	0	0	D. clouds	
Hazaribagh	27.88	708.1	29.90	759.4	76.8	24.9	52	NW	4.3	1.9			0			0	0	Blue sky	
Cuttack	29.77	756.1	29.85	758.2	83.0	28.3	78	ESE	1.7	0.8			7			0	0	D. clouds	
Calcutta (Alipore)	29.87	758.7	29.89	759.3	78.8	26.0	78	N	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.46	748.3	29.85	758.2	79.8	26.6	61	Calm	0.5	0.2			0			0	0	Blue sky	
Chittagong	29.80	756.9	29.89	759.3	78.1	25.6	72	N	4.1	1.8			0			0	0	Blue sky	
Sibsagar	29.55	750.6	29.89	759.2	79.7	26.5	74	S	0.9	0.4			4			0	0	Blue sky	
Rangoon																			
Jubbulpore	28.54	724.9	29.91	759.8	79.0	26.1	60	NE	2.5	1.1						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.30	566.3	30.26	768.7	35.6	2.0	42	N			4		0			0	0		Ab. Dom. Morgini.
Stelvio	22.29	566.1	30.27	768.8	34.2	1.2		NNE			1		7	W		0	0		Signora Ernesta Manfredi.
Udine	29.67	753.5	30.08	764.1	66.0	18.9	42	Calm	0	0			7			0	0		Prof. Giovanni Olodig.
Padua	29.98	761.4	30.09	764.2	60.3	15.7	62	N	1.8	0.8			1	E		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.86	758.4	30.06	763.4	62.8	17.1	55	E	1.8	0.8			1			0	0		Conte Alm. Da Schio.
Verona	29.85	758.2	30.08	763.9	67.1	19.5	49	SW			1		0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.08	738.7	30.12	765.1	66.2	19.0	22	N			4		0			0	0		Prof. Giuseppe Calza
Milan	29.61	752.1	30.14	765.6	63.5	17.5	68	SW			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.76	756.0	30.11	764.9	61.3	16.3	65	SW			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.22	742.1	30.14	765.6	62.4	16.9	52	NNW	0	0			0			0	0		Prof. P. F. Denza.
Mondovi	28.20	716.2	30.13	765.4	63.1	17.3	33	N			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.92	759.9	30.14	765.5	66.2	19.0	68	SSE			2		0			0	0		Prof. L. Vassallo.
Genoa	29.93	760.3	30.10	764.6	68.4	20.2	59	SW	3.1	1.4			0			0	0		Prof. G. M. Garibaldi
Piacenza	29.85	758.3	30.11	764.9	64.0	17.8	56	W	4.3	1.9			0			0	0		Dott. G. Manzi.
Parma	29.78	756.3	30.11	764.7	66.6	19.2	56	NNW			4		1			0	0		Prof. P. Pigorini.
Florence	29.86	758.5	30.12	765.1	67.1	19.5	62	W			2		2						Cav. F. Meucci.
Leghorn	30.08	762.8	30.12	765.0	66.6	19.2	65	W	0.7	0.3			3	W		0.039	1.0		Prof. P. Monte.
Siena	28.91	734.3	30.13	765.3	59.7	15.4	85	WSW	0	0			10	W		0	0		Prof. L. Toscani.
Urbino	28.59	726.2	30.17	766.3	58.1	14.5	76	NE			2		10			0	0		Prof. P. Serpieri.
Pesaro	30.06	763.5	30.11	764.8	60.3	15.7	82	NW	0	0			0			0	0		Prof. Luigi Guidi.
Ancona	29.97	761.2	30.08	764.0	61.7	16.5	80	NW			4		2			0	0		Prof. F. DeBosis.
Grosseto	30.05	763.3	30.17	766.2	66.2	19.0	70	WNW			4		7	SE		0	0		Avv. P. Ponticelli.
Rome	29.93	760.3	30.11	764.8	69.1	20.6	52	N	7.4	3.3			9			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.91	759.8	30.11	764.9	69.8	21.0	63	WSW			2		4	ESE		0	0		Prof. L. Palmieri.
Lecce					64.9	18.3	73	NW	8.1	3.6			5			0	0		Prof. C. De Giorgi.
Cosenza	29.22	742.2	30.11	764.9	68.2	20.1	68	NE	4.3	1.9			4			0	0		Prof. F. D. Conti.
Cagliari	29.91	759.7	30.10	764.5	67.3	19.6	41	NW			6		2			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.02	762.6	30.07	763.8	70.2	21.2	59	E			2		2			0	0		Prof. F. Cafiero.
Palermo	29.85	758.1	30.10	764.5	66.7	19.3	55	NE	3.8	1.7			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.12	714.1	30.06	763.4	63.9	17.7	45	NW			2		0			0	0		Prof. A. Pagani.
Syracuse	29.96	760.9	30.08	762.8	69.1	20.6	59	E			4		3	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.56	750.9	30.12	765.0	67.6	19.8	67	WSW	1.8	0.8			3			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.09	764.3	30.19	766.8	54	12.2	93	NNW	2	0.9						1.21	30.7	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	28.15	687.9	30.20	767.0	61.8	11.0	80	W	0.7	0.31		0	0			0	0	Blue sky	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.09	764.2	30.09	764.2	51.8	11.0		SSW			4					0.039	1.0		
Groningen	29.92	760.0	29.98	761.4	47.5	8.6		W			4					0.114	2.9		
Helder	30.01	762.3	30.01	762.3	49.6	9.8		WNW			4					0.177	4.5		
Hellevoetsluis			30.05	763.2	51.1	10.6	83	SW			6								
Utrecht	30.00	762.0	30.05	763.2	48.7	9.3	88	SW			5		8			0.402	10.2	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.51	749.6	29.57	751.0	41.0	5.0	69	NNW	16.6	7.4			4			0.295	7.5		
Brönö	29.03	737.3	29.07	738.3	43.2	6.2	74	SW	36	16			9			0	0		
Christiania	29.41	747.0	29.56	750.7	50.0	10.0	46	SW	11	5			10			0	0		
Tromsö	29.00	736.5	29.04	737.6	33.8	1.0	92	Calm	0	0			10			0.669	17.0	Rain & snow	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.80	756.8	29.98	761.6	67.3	19.6	92	WNW	7.4	3.3			8			0	0		Dr. J. A. Sampaio
Campo Major	29.33	745.0	30.34	770.6	70.5	21.4	77	ENE	8.7	3.9			4			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.17	766.3	30.24	768.1	73.2	22.9	68	SSE	9.8	4.4			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.97	761.3	30.33	770.3	67.6	19.8	44	NE	17.4	7.8			3	WNW		0	0		The Staff.
Ponta Delgada, (Azores)	29.98	761.4	30.05	763.2	68.4	20.2	96	S	6.9	3.1			10			0.130	3.3		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.65	753.0	30.07	763.7	53.8	12.1	78	WNW	7	3			10						Astronomical Obs.
Wilna	29.54	750.3	29.95	760.8	57.6	14.2	73	SSW	2	1			0						Astronomical Obs.
Dorpat	29.70	754.3	29.94	760.5	49.3	9.6	94	SSW	4	2			10						Prof. Dr. Weihrauch
St. Petersburg	29.89	759.2	29.91	759.6	47.8	8.8	91	SSW	11	5			10						Central Physical Obs.
Kuopio	29.35	745.5	29.67	753.6	49.8	9.9	92	S	22	10			10						Ch. Forsten.
Zieff	29.41	746.9	30.03	762.8	59.0	15.0	70	SW	7	3			0						Physical Cabinet.
Nikolaiev	30.11	764.9	30.19	766.7	59.0	15.0	50	Calm	0	0			0						Kurdakof.
Kertch	30.10	764.4	30.11	764.9	56.5	13.6	70	NE	11	5			3						Lagorio.
Moscow	29.64	752.9	30.20	767.1	46.0	7.8	86	S	9	4			9						Meteorological Obs.
Lugan	29.98	761.5	30.19	766.7	52.9	11.6	62	Calm	0	0			10						Meteorological Obs.
Archangel	29.71	754.5	29.72	755.0	50.5	10.3	76	SSW	22	10			0						Ogorodnikof.
Tiflis	28.87	733.3	30.29	769.4	59.0	15.0	82	Calm	0	0			10						Physical Observatory.
Astrakhan	30.41	772.4	30.33	770.3	46.6	8.1	77	NE	4	2			7						Sebastianof.
Kasan	29.96	760.9	30.23	767.9	48.2	9.0	76	Calm	0	0			10						Physical Cabinet
Orenburg																			Tschernischef.
Ekaterinburg	29.27	743.5	30.24	768.0	43.5	6.4	66	WNW	7	3			3						Meteorological Obs.
Nukuss	29.98	761.6	30.22	767.5	62.6	17.0	41	NNE	2	1			0						
Kasaly																			Bobrof.
Tashkend	28.58	726.0	30.32	770.0	52.5	11.4	92	Calm	0	0			0						Michelson.
Barnaul	29.32	744.8	29.85	758.1	46.0	7.8	59	SW	9	4			10						Meteorological Obs.
Yeniseisk	29.30	744.1	29.44	747.2	37.2	2.9	99	SW	4	2			10					Raining	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.05	763.3	30.19	766.9	58.6	14.8	68	Calm	0	0			8						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					39.2	4.0	75	E	9	4			8						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Navaran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.18	715.8	30.42	772.7	62.6	17.0	38	NE	7.4	3.33		1	0	S		0	0	Almost clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Vilkanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.96	760.9	30.04	762.9	79.2	26.2	85	ENE	2.2	1.0		0	2ks		ENE	0	0	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.17	766.4	30.27	768.8	76.3	24.6	54	ESE	37.2	16.6		0	1		SE	0	0		Capt. C. Pajazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.89	759.1	84.2	29.0	84	SE	0	0		3cs	1k			0.148	3.75	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.37	746.0	29.41	747.0	43.2	6.2		SE			6		0			0.118	3.0		
Umea	29.36	745.8	29.41	747.1	45.7	7.6	77	SW			8		5			0	0		
Hernosand	29.32	744.6	29.37	745.9	47.8	8.8	68	SSW			7		7			0	0		
Stockholm	29.52	749.9	29.70	754.4	51.3	10.7	83	WSW			6		3			0	0		
Wisby	29.78	756.3	29.84	757.8	51.1	10.6	77	SW			6		5			0	0		
Sub-Series.																			
Upsala	29.58	751.4	29.66	753.3	51.6	10.9	53	SW	24.2	10.8			3		WSW	0.047	1.19		Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.95	735.2	30.37	771.4	54.3	12.4	54	N			1		2			0.098	2.5		The Observatory.
Zurich	28.70	728.9	30.34	770.6	53.2	11.8	56	W					4			0.039	1.0	Cloudy	The Observatory.

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +9.1 mm; Thermometer, —0.4 cent.; Relative Humidity, —18 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.00	761.0	57.2	14.0	86	ENE	2	1.0			10		N	0.354	9.0	Raining	The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.10	764.6	65.3	18.5		NW			2		0						B. Stéfanides.
Valona			30.07	763.7	67.6	19.8		W			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.78	756.4	29.89	759.2	84.9	29.4	55	WSW			2		4c;k		SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			29.97	761.2	60	15.6		E	1	0.4		0	2s		E	0.20	5.1	Fair	W. R. Bigg.
*Chatham, N. B.			29.99	761.7	35	1.7	81	NW	8	3.6		10ck	0	NW		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			29.96	761.0	42	5.6	68	NW	5	2.2			10ks		Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.76	755.9	29.95	760.7	44.3	6.8	98	NW			1		Fog			0.620	15.75	Drizzling	James Smith, M. A.
Dalhousie, N. B.	30.00	762.0	30.03	762.7				W			1					0	0	Clear	H. A. Johnson.
Esquimault, B. C.	30.11	764.8	30.15	765.8	50.3	10.2	100	Calm				4cs	0			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			30.06	763.5	36	2.2	75	N	18	8.0		5c	5s	NW	Calm	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.99	761.7	30.06	763.5	39.1	3.9	72	NW	3	1.3			10cs			0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			30.30	769.6	27	—2.8	98	Calm	0	0		Haze	5ks	S	S	0	0	Fair	James Stewart.
Goderich, Ontario	29.46	748.0	30.25	768.3	52.2	11.2	96	NW			2	7k	0	NW		0	0	Threatening	H. J. Strang, M. A
Granton, Ontario	29.08	738.6	30.18	766.6	52	11.1	86	NW			1	1c	0	E		0	0	Clear	James Grant.
*Halifax, N. S.	29.84	757.9	29.98	761.5	40	4.4	82	NW	8	3.6			8ks		NW	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.82	757.4	30.19	766.8	58.5	14.7	65	W			4	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.34	745.2	29.36	745.7	40	4.4	64	NW			5	3ck	4ks	NW		0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.08	753.9	30.04	763.0	59	15.0	78	W	9	4.0		2c	0	Calm		0.69	17.5	Clearing	S. Woods, M. A
*Montreal, Quebec	29.75	755.6	29.95	760.7	43	6.1	94	N	6	2.7			10n			0.39	9.9	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.46	748.0	30.14	765.5	49	9.4	89	NW	14	6.3		5k	5ks	NW	NW	0.56	14.2	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.33	745.0	30.08	764.0	54.7	12.6	87	W			3	0	1d			0.33	8.4	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.45	748.0	30.13	765.3	63	17.2	83	W	12	5.4		10k	0	W		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.77	756.1	29.82	757.4	40.4	4.7		NW	5	2.2						0	0	Fine	Peter Grant
Port Stanley, Ontario	29.53	750.0	30.17	766.3	58	14.4	75	W	10	4.5			10ks		NW	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.72	754.9	30.04	763.0	41	5.0	74	NE	33	14.8			10n		NE	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.61	752.1	30.07	763.8	53	11.7	83	NW	18	8.0			10s		NW	0.12	3.0	Cloudy	W. H. McIntyre.
St. John, N. B.	29.86	758.4	30.03	762.7	40	4.4	82	N	1	0.4		10cs	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.49	749.0	30.19	766.8	51	10.6	84	NW	7	3.1		10k	0	N		0.11	2.8	Cloudy	K. Stewart.
Stayner, Ontario			30.16	766.1	51	10.6	79	NW	13	5.8			8n		NW	0.06	1.5	Threatening	R. J. Cole.
Stratford, Ontario	28.91	734.3	30.19	766.8	50.3	10.2	88	NW	10	4.5		0	2s			0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.84	757.9	29.87	758.7	43	6.1	61	NW	12	5.4			10ks		NW	Inap.	Inap.	Cloudy	T. C. Hill.
*Toronto, Ontario	29.76	755.9	30.14	765.5	55	12.8	73	W	13	5.8		0	2ks		W	0	0	Clear	Magnetic Observatory.
Windsor, N. S.	29.88	758.9	29.98	761.5	40.5	4.7	82	Calm	0	0		2ks;c	6k;n			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery
Sub-Series.																			
St. Johns, Newfoundland					40.0	4.4	91	NW				10ks	10ns			0.15	3.8	Stormy	John Delany

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.75	755.6	29.97	761.2	58	14.4	87	SE	2	0.9			10ks		NW	0.07	1.8	Cloudy	
Alpena, Michigan	29.57	751.1	30.23	767.8	45	7.2	92	NW	6	2.7		0	0			0.37	9.4	Clear	
Atlantic City, New Jersey	30.10	764.5	30.12	765.0	61	16.1	88	W	8	3.6		5c	0	NW		0	0	Fair	
Augusta, Georgia	30.11	764.8	30.30	769.6	59	15.0	88	N	3	1.3		0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	30.12	765.0	30.17	766.3	62	16.7	77	SW	4	1.8		5c	Sm'e	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.08	764.0	30.10	764.5	61	16.1	88	W	10	4.5		8c	0	NW		0	0	Fair	
Bismarck, Dakota	28.34	719.8	30.06	763.5	38	3.3	71	E	9	4.0			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.29	693.2	29.98	761.5	35	1.7	70	S	1	0.4		0	5s		S	0	0	Fair	
Boston, Massachusetts	29.80	756.9	29.95	760.7	60	15.6	76	SW	4	1.8			10s		SW	0.05	1.3	Cloudy	
Brackettville, Texas	28.75	730.2	29.75	755.6	68	20.0	100	Calm	0	0			10n		E	0.15	3.8	Light rain	
Breckenridge, Minnesota	29.23	742.4	30.27	768.8	34	1.1	100	Calm	0	0			10s		Calm	0	0	Cloudy	
Brownsville, Texas	29.83	757.7	29.89	759.2	81	27.2	82	SE	9	4.0		8c	2k	W	SE	0.16	4.1	Cloudy	
Buffalo, New York	29.40	746.7	30.10	764.5	61	16.1	94	SW	12	5.4			10s		W	0	0	Cloudy	
Burlington, Vermont	29.68	753.9	29.94	760.5	55	12.8	68	N	4	1.8			10n		N	0.86	21.8	Light rain	
Cairo, Illinois	29.81	757.2	30.20	767.1	62	16.7	83	SE	6	2.7		5c	0	Calm		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.79	680.4	30.28	769.1	38	3.3	81	N				0	0			0.19	4.8	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.20	767.1	30.20	767.1	65	18.3	89	NW	3	1.3		0	0			0	0	Clear	
Cape Henry, Virginia	30.18	766.6	30.21	767.3	68	20.0	60	SW	13	5.8		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.26	768.6	30.27	768.8	68	20.0	84	Calm	0	0		1k	0	W		0	0	Clear	
Cape May, New Jersey	30.12	765.0	30.15	765.8	63	17.2	83	SW	18	8.0		8c	0	NW		0	0	Fair	
Charleston, South Carolina	30.21	767.3	30.27	768.8	67	19.4	90	NE	5	2.2		1cs	0	Calm		0	0	Clear	
Cheyenne, Wyoming	24.09	611.9	30.03	762.7	29	—1.7	100	SW	4	1.8		2ck	2s	W	W	0.01	0.3	Fair	
Chicago, Illinois	29.51	749.5	30.20	767.1	56	13.3	68	NE	8	3.6		0	Fog		Calm	Inap.	Inap.	Clear	
Cincinnati, Ohio	29.54	750.3	30.19	766.8	54	12.2	86	S	2	0.9		0	Fog		S	0	0	Foggy	
Cleveland, Ohio	29.50	749.3	30.22	767.6	62	16.7	71	SW	6	2.7		2cs	2s	W	W	0	0	Fair	
Concho, Texas					51	10.6	85	N	12	5.4		0	8s			0.86	21.8	Cloudy	
Corsicana, Texas	29.51	749.5	29.98	761.5	63	17.2	89	NE	10	4.5			10s		Calm	1.25	31.7	Cloudy	
Davenport, Iowa	29.53	750.0	30.18	766.6	52	11.1	72	E	12	5.4		1c	4s	Calm	S	Inap.	Inap.	Fair	
Denison, Texas	29.20	741.7	29.99	761.7	63	17.2	94	E	7	3.1			10n		E	1.57	39.9	Light rain	
Denver, Colorado	24.85	631.2	30.07	763.8	33	0.6	89	Calm	0	0		0	0			0.27	6.9	Clear	
Detroit, Michigan	29.50	749.3	30.15	765.8	62	16.7	83	NW	6	2.7			10s		NW	0	0	Cloudy	
Dodge City, Kansas	27.50	698.5	29.84	757.9	40	4.4	91	N	12	5.4			10s		N	1.97	50.0	Cloudy	
Dubuque, Iowa	29.49	749.0	30.20	767.1	49	9.4	71	E	8	3.6		5cs	0	E		0	0	Fair	
Duluth, Minnesota	29.57	751.1	30.27	768.8	38	3.3	90	SE	4	1.8			10s		SE	Inap	Inap.	Cloudy	
Eagle Pass, Texas	29.12	739.6	29.85	758.2	65	18.3	73	NW	12	5.4			10n		SW	0.02	0.5	Light rain	
Eastport, Maine	29.93	760.2	30.00	762.0	44	6.7	67	NE	5	2.2			10s		W	0	0	Cloudy	
Erie, Pennsylvania	29.44	747.8	30.15	765.8	63	17.2	78	SW	16	7.2		10cs	0			0	0	Cloudy	
Escanaba, Michigan	29.61	752.1	30.29	769.4	43	6.1	83	W	3	1.3			10s		W	0	0	Cloudy	
Florence, Arizona	28.35	720.1	29.95	760.7	59	15.0	54	W				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.02	610.1	30.02	762.5	43	6.1	83	SE	8	3.6			10s		SE	0	0	Cloudy	
Fort Craig, New Mexico	25.52	648.2			44	6.7	84	SW	4	1.8			10s		Calm	0	0	Cloudy	
Fort Gibson, Indian Ter	29.50	749.3	30.03	762.7	62	16.7	100	NW	6	2.7			Fog			1.36	34.3	Foggy	
Fort Griffin, Texas	28.79	731.3	30.08	764.0	49	9.4	93	NW	18	8.0			10s		Calm	2.42	61.5	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.86	733.0	29.98	761.5	49	9.4	93	NNW	8	3.6			10s		W	2.21	56.1	Cloudy	
Fort Sully, Dakota	28.48	723.4	30.18	766.6	43	6.1	91	Calm	0	0			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.92	760.0	29.96	761.0	77	25.0	100	S	7	3.1		2cs	2ks	W	S	2.22	56.4	Fair	
Grand Haven, Michigan	29.58	751.3	30.23	767.8	51	10.6	86	NE	7	3.1			10s		W	0	0	Cloudy	
Indianapolis, Indiana	29.43	747.5	30.21	767.3	55	12.8	87	Calm	0	0		0	Fog			0	0	Clear	
Indianola, Texas	29.89	759.2	29.92	760.0	79	26.1	90	SE	13	5.8			10ks		SE	0.56	14.2	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	30.17	766.3	30.19	766.8	70	21.1	84	NE	6	2.7		8k	0	E		0.15	3.8	Cloudy	
Keokuk, Iowa	29.53	750.0	30.14	765.5	57	13.9	87	SE	8	3.6		0	8s		Calm	Inap.	Inap.	Fair	
Key West, Florida	30.02	762.5	30.05	763.3	78.5	25.8	84	NE	12	5.4			8s		NE	0.02	0.5	Cloudy	
Kittyhawk, North Carolina	30.24	768.1	30.26	768.6	63	17.2	94	SW	8	3.6		0	0			0	0	Clear	
Knoxville, Tennessee	29.29	744.0	30.32	770.1	52	11.1	86	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.46	748.3	30.22	767.6	43	6.1	83	NE	4	1.8			10n		NE	0.03	0.8	Light rain	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	50	10.0	79	Calm	0	0			10s		Calm	0.04	1.0	Cloudy	
Laredo, Texas					82	27.8	74	SE	8	3.6		10k	0	S		0	0	Cloudy	
Leavenworth, Kansas	29.20	741.7	30.04	763.0	51	10.6	86	NW	6	2.7			10s		Calm	0.29	7.4	Cloudy	
Los Angeles, California	29.60	751.8	29.94	760.5	55	12.8	79	NE	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.68	753.9	30.24	768.1	58	14.4	87	SE	2	0.9		0	Fog		Calm	0	0	Foggy	
Lynchburg, Virginia	29.56	750.8	30.24	768.1	57	13.9	81	Calm	0	0		0	0			0	0	Clear	
Maricopa Wells, Arizona					46	7.8	75	W				0	0			0	0	Clear	
Marquette, Michigan	29.51	749.5	30.22	767.6	47	8.3	77	NW	8	3.6			10s		NW	0	0	Cloudy	
Mason, Texas	28.30	718.8	30.02	762.5	65	18.3	83	Calm	0	0			10n		Calm	Inap.	Inap.	Rainy	
Memphis, Tennessee	29.84	757.9	30.16	766.1	67	19.4	79	SE	4	1.8		0	5s		SE	0	0	Fair	
Milwaukee, Wisconsin	29.57	751.1	30.27	768.8	48	8.9	77	N	8	3.6			8s			0	0	Cloudy	
Mobile, Alabama	30.14	765.5	30.18	766.6	71	21.7	85	E	10	4.5		0	1s		SE	0	0	Clear	
Montgomery, Alabama	30.01	762.2	30.24	768.1	64	17.8	86	NE	5	2.2		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	29.20	741.7	30.26	768.6	54	12.2	73	Calm	0	0		0	Fog			0	0	Fair	
Mt. Washington, N. H.	23.75	603.2	30.11	764.8	40	4.4	100	NW	60	26.8			10n		NW	0.44	11.2	Light rain	
Nashville, Tennessee	29.72	754.9	30.26	768.6	58	14.4	87	E	1	0.4		0	0			0	0	Clear	
New Haven, Connecticut	29.89	759.2	30.01	762.2	61	16.1	82	Calm	0	0		2ck	Fog	W	Calm	0	0	Fair	
New London, Connecticut	29.96	761.0	30.01	762.2	58	14.4	93	Calm	0	0		5ck	Haze	S	Calm	0	0	Fair	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	75	23.9	95	SE	13	5.8			10n		SE	0.12	3.0	Light rain	
Newport, Rhode Island	29.94	760.5	29.99	761.7	58	14.4	93	SW	7	3.1		7k	0	W		0	0	Fair	
New York, New York	29.89	759.2	30.06	763.5	62	16.7	71	SW	10	4.5		0	0			0	0	Clear	
Norfolk, Virginia	30.20	767.1	30.26	768.6	59	15.0	82	SW	9	4.0		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.24	691.9	29.89	759.2	38	3.3	80	NE	5	2.2			10s		Calm	0	0	Cloudy	
Olympia, Washington Ter.	30.11	764.8	30.15	765.8	43	6.1	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	28.99	736.3	30.09	764.3	45	7.2	92	N	12	5.4			10s		NE	1.01	25.7	Cloudy	
Oswego, New York	29.74	755.4	30.06	763.5	61	16.1	88	W	9	4.0			10s		NW	0.02	0.5	Cloudy	
Pembina, Dakota	29.44	747.8	30.31	769.9	29	—1.7	88	SE	2	0.9			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	30.08	764.0	30.13	765.3	60	15.6	88	SW	6	2.7		5c	Fog	Calm	Calm	0	0	Fair	
Phœnix, Arizona					46	7.8	69	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.76	451.1	29.97	761.2	7	—13.9	77	S	4	1.8		0	0			0.23	5.8	Clear	
Pioche, Nevada	24.06	611.1	29.83	757.7	38	3.3	45	N	5	2.2		0	2s		N	0	0	Fair	
Pittsburg, Pennsylvania	29.38	746.2	30.20	767.1	51	10.6	93	W	1	0.4			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.52	749.8	30.18	766.6	54	12.2	73	N	5	2.2			10ks		NW	0	0	Cloudy	
Portland, Maine	29.93	760.2	29.98	761.5	49	9.4	93	NE	12	5.4			10n		E	0.28	7.1	Light rain	
Portland, Oregon	30.10	764.5	30.20	767.1	44	6.7	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.75	628.6	30.11	764.8	34	1.1	70	S				2c	0	S		0.38	9.7	Fair	
Punta Rassa, Florida	30.07	763.8	30.09	764.3	75	23.9	81	NE	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.63	752.6	29.99	761.7	56	13.3	29	Calm	0	0		0	0			0	0	Clear	
Rochester, New York	29.47	748.5	30.07	763.8	60	15.6	76	NW	17	7.6			10s		NW	0.03	0.8	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.59	751.6	30.18	766.6	40	4.4	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Sacramento, California	29.89	759.2	29.97	761.2	53	11.7	42	NW	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.58	751.3	30.14	765.5	62	16.7	83	S	4	1.8			10s		Calm	0	0	Cloudy	
St. Marks, Florida	30.18	766.6	30.19	766.8	68	20.0	90	NE	6	2.7		2k	0	NE		0	0	Fair	
St. Paul, Minnesota	29.35	745.5	30.20	767.1	42	5.6	83	NE	5	2.2			10s		Calm	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.68	652.3	30.01	762.2	44	6.7	51	NE	4	1.8		2c	0	Calm		0	0	Clear.	
San Antonio, Texas	29.17	740.9	29.72	754.9	77	25.0	90	S	8	3.6		2c	8ks	Calm	S	0.05	1.3	Cloudy	
San Diego, California	29.91	759.7	29.98	761.5	56	13.3	81	NE	6	2.7		0	0			0	0	Clear	
Sandusky, Ohio	29.68	750.0	30.20	767.1	60	15.6	62	SW	10	4.5		Haze	4s	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.05	763.3	30.07	763.8	62	16.7	83	W	16	7.2		5c	Sm'e	NW		0	0	Fair	
San Francisco, California	29.89	759.2	29.96	761.0	55	12.8	80	W	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	33	0.6	95	Calm	0	0			10s		Calm	0	0	Threatening	
Savannah, Georgia	30.17	766.3	30.26	768.6	65	18.3	89	N	3	1.3		2cs	5s	W	E	0	0	Fair	
Shreveport, Louisiana	29.79	756.7	30.00	762.0	72	22.2	94	E	6	2.7			10s		E	0.78	19.8	Cloudy	
Smithville, North Carolina	30.26	768.6	30.30	769.6	65	18.3	100	NE	5	2.2		1c	0	SW		0	0	Clear	
Springfield, Massachusetts	29.78	756.4	29.91	759.7	61	16.1	77	S	3	1.3			10ks		SW	0	0	Cloudy	
Stanwix, Arizona																			
Stockton, Texas	27.04	686.8	30.04	763.0	48	8.9	100	NE	8	3.6			10s		NE	0.03	0.8	Cloudy	
Thatcher's Island, Mass.	29.91	759.7	29.96	761.0	54	12.2	93	N	16	7.2			Fog		N	0	0	Dense fog	
Toledo, Ohio	29.51	749.5	30.18	766.6	60	15.6	87	S	4	1.8		5cs	Haze	NW	Calm	0	0	Fair	
Tucson, Arizona	27.48	698.0	30.03	762.7	60	15.6	70	Calm				5ck	0	Calm		0	0	Fair	
Tybee Island, Georgia	30.21	767.3	30.24	768.1	70	21.1	90	NE	12	5.4		2c	1ks	E	E	0	0	Fair	
Umatilla, Oregon	29.86	758.4			39	3.9	91	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.86	758.4	30.12	765.0	69	20.6	90	SE	10	4.5		10k	0	SE		0	0	Cloudy	
Virginia City, Montana	24.36	618.7	29.84	757.9	32	0.0	79	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.63	752.6	30.01	762.2	46	7.8	76	E	5	2.2		0	0			0	0	Clear	
Washington, D. C.	30.08	764.0	30.20	767.1	59	15.0	87	Calm	0	0		5c	Sm'e	W		0	0	Dense smoke	
Wickenburg, Arizona					44	6.7	35	NW				5k	0	Calm		0	0	Fair	
Wilmington, N. Carolina	30.20	767.1	30.28	769.1	66	18.9	88	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	26	— 3.3	53	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Mass.	29.95	760.7	30.00	762.0	59	15.0	100	W	2	0.9			Fog			0	0	Dense fog	
Yankton, Dakota	28.94	735.1	30.25	768.3	44	6.7	84	NE	2	0.9			10s		Calm	Inap.	Inap.	Cloudy	
Yuma, Arizona	29.79	756.7	29.95	760.7	55	12.8	44	NE	3	1.3		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.97	761.2	30.02	762.5	24.5	—4.2	94	SW	11	4.9		0	0			0	0	Clear.	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.96	761.0	29.98	761.5	82	27.8	83	E	1.2	0.5		4k	4ks	NE	NE	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	81	27.2	78	Calm	0	0		2c	2s	SE		0	0		James Gall.
Navassa, W. I.	29.86	758.4	29.94	760.5	83	28.3		N			1					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					87	30.6	72	E	2	0.9		5ck	2k	NE		0	0		G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.79	756.7	29.81	757.2	82	27.8	87	E				0	5ks		E				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.00	762.0	84	28.9	68	E			2	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			64.2	17.9	79	Calm			0	1cs	0			0	0	Fair	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,838 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	29.95	760.7	55	12.8	50	10.0	93	Calm	0	0			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.30	769.6			74	23.3	81	ENE	3	1.3			10		W	0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.98	761.5	70	21.1	50	10.0	93	NE	9	4.0			10			0.2	5			Drizzling	
Naval Hospital, Yokohama, Japan	30.05	763.3	61	16.1	55	12.8	93	NW			1		Fog		Calm	0.70	17.8			Fair	
Adams. Buenos Ayres	30 07†	763.8†	62	16.7	61	16.1	66	W			1–2		1		N	0	0			D. clouds	
Alert. N. 41° 46′, E. 132° 41′	30.21†	767.3†	55	12.8	55	12.8	87	WSW			4–5		1		SW			Smooth		Hazy	
Alliance, Constantinople, Turkey.	30.09	764.3	63	17.2	63	17.2	62	N&E			2		10		N&E					Rainy	
Ashuelot, Tientsin, China	30.26	768.6	62	16.7	59	15.0	76	S			2		10		Calm			Smooth		Misty	
Canonicus, New Orleans, La	30.10	764.5	54	12.2	74	23.3	95	ESE			2		10		SE					Cloudy	
Colorado, New York, N. Y.	30.15	765 8	69	20 6	64	17.8	73	WSW	8	3.6			4		SW					Light fog	
Despatch, Mudania, Turkey	30.06	763 5	69	20.6	60	15.6	76	NE			3		4		NE					Pleasant	
Franklin, Norfolk, Va.	30.30	769.6	57	13.9	61	16.1	100	WSW	6	2.7			1		WSW	0	0			Clear	
Frolic, N. 29° 28′, W. 72° 43′	30.30	769.6	78	25.6	87	30.6	78	NE			5		10kn		N&E	Blank	Blank	Moderate.	N&E	Squally	
Gettysburg, Castel-a-mare, Italy	29.89‡	759.2‡			73	22.8	95	W			4		3		ENE	0	0			D. clouds	
Kearsarge, N. 7° 48′, E. 73° 28′	29.88	758.9			82	27.8	91	W			2		8		S&W	0.45	11.4	Smooth	S&W	D. clouds	
Lackawana, Esquimault, B. C.	30.22	767.6			53	11.7	93	Calm			0							Smooth		D. clouds	
Marion, Smyrna, Turkey	29.90	759.4	70	21.1	69	20.6	39	ENE			6		1		Calm	0	0	Moderate.	ENE	D. clouds	
Michigan, Chicago, Ill.	29.73	755.1	65	18.3	55	12 8	87	NE			2		0							Fair	
Monocacy, Yokohama, Japan	30.06	763.5	59	15.0	57	13.9	94	N			1		1		N	Blank	Blank	Smooth		D. clouds	
Monongahela, N. 37° 19′, W. 33° 36′	29.94	760.5	72	22.2	72	22.2	85	SW			2–3		ck					Long	S&W	D. clouds	
New Hampshire, Port Royal, S. C.	30.43	772 9			68	20.0	99	NE	8	3.6			3		NE	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.15	765.8	62.5	16.9	62.5	16.9	62	Calm	0	0			0			0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.05†	763 5†	70	21.1	69	20.6	85	SSE			2		10					Long	W	Misty	
Ossipee, Portland, Me.	30.04	763.0	74	23.3	50	10.0	93	ENE			4		10		ENE					Rain ; fog	
Palos, Shanghai, China	30.26	768.6	65	18.3	64	17.8	83	ENE			2		0							Clear	
Pensacola, Mare Island, Cal.	30.05	763.3			57	13.9	94	Calm			0		0			0	0			Clear	
Plymouth, Norfolk, Va.	30.50†	774.7†	64	17.8	61	16.1	94	SW			1		0							Clear	
Ranger, Shanghai, China	30.33	770.4			67	19.4	79	E			1		1		Calm	0	0			Pleasant	
Rio Bravo, Brownsville, Texas	29.78	756 4			81	27.2	96	SSE			1		6		SW					D. clouds	
Santee, Annapolis, Md.	30.24	768.1	65	18.3	63	17 2	78	NW			2		4			0	0			Clear	
St. Louis, League Island, Pa	30.15	765 8	59	15.0	57	13.9	??	SW	10	4.5			5		SW	0	0			Fair	
Swatara, New York, N. Y.	30.11	764 8			64	17.8	83	WNW			2		1							D. clouds	
Tennessee, Yokohama, Japan	30.11	764.8	63	17.2	58	14.4	94	NNW	8	3.6			2		Calm	0.71	18.0	Short	E	D. clouds	
Trenton, Marseilles, France	30.30†	769.6†	67	19.4	64	17.8	43	NNW	36	16.1			0			0	0			Blue sky	
Vandalia, Villefranche, France	30.19	766.8	70	21.1	70	21.1	66	S			0–1		0							Blue sky	
Wabash, Boston, Mass.	30.00	762.0	62	16.7	63	17.2	78	WSW	2	0.9			10		Calm	0.02	0.5			Drizzling	
Wyoming, Washington, D. C.	30.35†	770.9†			64	17.8		Calm			0									Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.10*	764.5*	78	25.6	65	ENE			5		8		NE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid. From October 1, 1877, "City of Peking" uses an Aneroid barometer, correction for elevation has been applied, a correction of —0.007 inch, until date, required for instrumental error.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Glendell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic,																			Capt. John Metcalf.
S. S. Gaelic N. 42° 07′, E. 157° 00′			29.97*	761.2*	59	15.0	??	SE			4		k		S	Long	NE	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 30° 51′, E. 155° 00′			29.81	757.2	78	25.6	86	Var.			1–4		4		NW	Long	SE	Showery	Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsc.
S. S. Nürnberg, N. 48° 57′, W. 16° 45′			30.40	772.1	64.0	17.8	73	S			3		k		S	Light	S	Squally	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool			30.02*	762.5*	49	9.4		NNW			2		2		ENE				Captain Sargent.
S. S. Ohio, N. 49° 28′, W. 45° 27′			28.91	734.3	49	9.4	89	SSW			4				SSW	Moderate.	Confused.	Clear	Captain Morrison.
S. S. Pennsylvania, N 43° 36′ W. 45° 08′			29.45†	748.0†	54.5	12.5	97	W			8		8		W	High	W	Squally	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 29′, W. 79° 28′			30.28	769.1	74	23.3	86	NE	8	3.6		1c	1k			Swell	S	Clear	Capt. James Jorgensen.

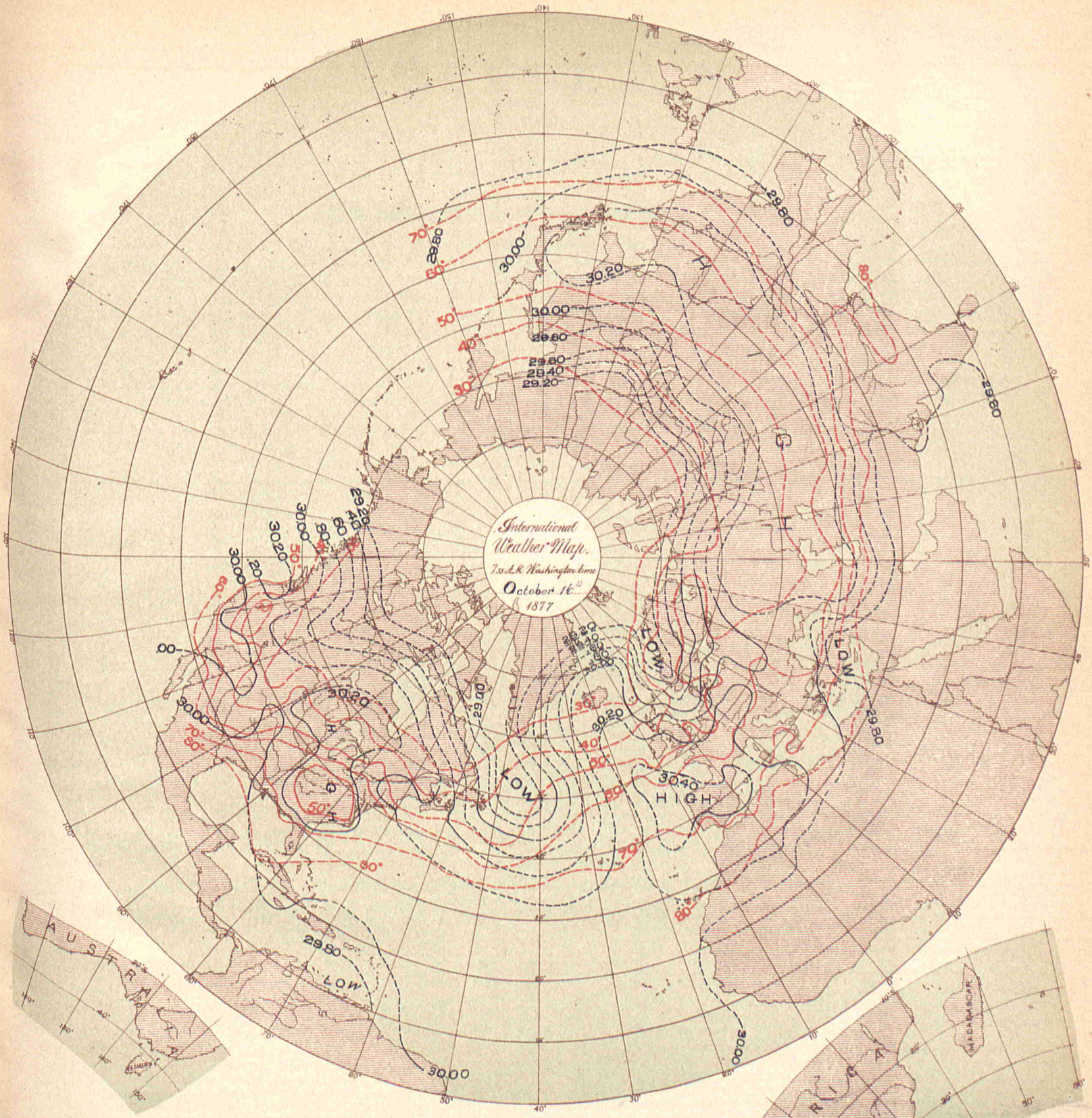
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 17, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:40 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.29	769.4	72.5	22.5	63	E			2		1			0	0	Very fair.	Michel.
Algiers			30.27	768.8	68.7	20.4	61	NE			2		0			0	0	Clear	Peter.
La Calle			30.29	769.3	68.0	20.0	66	NW			3		5			0	0	Cloudy	Fleury.
Tunis			30.21	767.4	70.7	21.5	45	NW			5		0			0	0	Clear	Jacques.
Sfax			30.30	769.5	62.6	17.0		NNW			2		1			0	0	Very fair.	Husson.
Saida			30.29	769.4	68.2	20.1	53	N			3		2			0	0	Fair	Millot.
Tebessa			30.27	768.9				NW			3		2			0	0	Fair	Bourgeois.
Geriville			30.24	768.2	64.4	18.0	62	NNW			2		2			0	0	Fair	Lemaillot.
Laghouat			30.23	767.9	68.0	20.0	72	W			2		0			0	0	Clear	François.
Biskra			30.44	773.1	79.2	26.2	32	NNW			1		3			0	0	Pretty Fair.	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890 ? meters, or 2,919.9 ? feet; Tebessa, 1,088 ? m., or 3,569.4 ? ft.; Geriville, 1,360 ? m.; or 4,461.7 ? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.57	751.1	30.12	765.1	55.4	13.0	60	SW			2		10			0.197	5.0	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.30	744.1	30.09	764.2	41.7	5.4	87	WNW			4		10			0.094	2.4		Dr. Wierzbiski.
Eperies	29.09	738.8	29.97	761.2	52.2	11.2	63	N			1		10ns		S	0.131	3.32		Julius Mikolik.
Gratz	28.89	733.7	30.15	765.7	53.6	12.0	57	NW			4		9			0	0		Andreas Rospini.
Hermannstadt	28.53	724.6	29.94	760.5	55.2	12.9	75	SE			1		10			0.142	3.60	Raining	Prof. Reissenberger.
Kremsmünster	28.88	733.5	30.26	768.7	41.9	5.5	83	WNW			5		10			0.197	5.0		Prof. C. Wagner.
Lemberg	28.96	735.6	29.96	761.0	46.4	8.0	88	NW			1		10			0.150	3.8		Dr. T. Stanecki.
Pola	29.94	760.4	30.05	763.2	63.5	17.5	36	NE			2		7ns			0	0		I.R. Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.76	756.0	30.05	763.2	52.5	11.4	67	N			2		10			0	0		Karl Stancel.
Trieste	30.00	761.9	30.10	764.5	59.0	15.0	66	E			1		10			0	0	Cloudy	P. Busin.
Vienna	29.46	748.3	30.17	766.4	48.0	8.9	54	NW			4		4			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.83	732.2	30.38	771.6	44.4	6.9	61	W			2		10			0.067	1.7		Royal Observatory.
Brussels	30.19	764.4	30.30	769.6	48.6	9.2	55	W			6	1	5	WNW	W,WSW	0.043	1.10		
Furnes	30.32	770.1	30.34	770.7	51.1	10.6	56	WNW			6		8					Raining	
Maeseyck	30.13	765.2	30.26	768.5	47.1	8.4	78	SW			8		3			0.071	1.8		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	30.12	765.0	30.22	767.6	38.9	3.8		WNW	29	13.0			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.29	769.4	30.31	769.9	47	8.3		NNW			2		3					Blue sky	William McNeil.
Armagh, Observatory			30.40	772.1	45.9	7.7		NNW	2	0.9			6					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.35	770.9	47.3	8.5		NNW	16	7.2			9					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.42	772.7	50.7	10.4		Calm			0		7					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.93	760.2	30.33	770.4	45.6	7.6		W			1		6			0.21	5.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.86	758.4	29.89	759.2	84	28.9		E			1		4					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.33	770.4	47.0	8.3		NNW			2		10					Overcast	H. Todd. [H. C.
Cardington			30.35	770.9	44.6	7.0		NW			2		10					Overcast	John McLaren.
Chatham, School M. E.	30.22	767.6	30.36	771.1	49.2	9.6		NW			2		9					Blue sky	Lt. Col. C. M. Martin, R.E.
Dartmoor	28.96	735.6	30.46	773.7	47.0	8.3		W			2		3					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.34	770.6	30.37	771.4	47	8.3		WNW			3		2					D. clouds	J. Mac Gowan.
Dover	30.33	770.4	30.36	771.1	50	10.0		WNW			3		0					Clear	J. Costello.
Eccles, (near Manchester)			30.33	770.4	44.8	7.1		W	3.4	1.5			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.22	767.6	30.45	773.4	50.9	10.5		ENE			1		7					Overcast	The Staff.
Fort Napier, (Natal)	27.68	703.1	29.87	758.7	82.8	28.2		E			2		0					Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.89	759.2	84.8	29.3		Calm			0		4					D. clouds	
Galway, Queen's College					56	13.3		N			8		10					Raining	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.22	767.6	30.25	768.3	69.0	20.6		NE			6		4					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	30.10	764.5	30.31	769.9	42.9	6.1		NNW			2		4					Blue sky	D. G. Maclean.
Great Yarmouth	30.26	768.6	30.27	768.8	46	7.8		NW			5		3					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	30.18	766.6	30.36	771.1	51.5	10.8		NW			3		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.21	767.3	30.44	773.2	52.5	11.4		NNW			1		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.42	772.7	54	12.2		N			2		2			0	0	D. clouds	M. P. Moyle.
Holyhead	30.32	770.1	30.38	771.6	49	9.4		WNW			4		3					D. clouds	John Tilston.
Jersey	30.19	766.8	30.48	774.2	53.0	11.7		SW			3		8					D. clouds	J. Fisher.
Kew, Observatory			30.37	771.4	50.9	10.5		WNW	14	6.3			5					D. clouds	The Staff.
Kingstown	30.39	771.9	30.42	772.7	47	8.3		WNW			4		7					D. clouds	George Mitchell.
Leicester, Museum			30.34	770.6	44.2	6.8		W			1		1					Hazy	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.04	763.0	30.12	765.0	70.0	21.1		NW			2		8					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	30.17	766.3	30.27	768.8	37	2.8		NW			1		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.92	760.0	80.0	26.7		N			5		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.15	765.8	30.35	770.9	46.2	7.9		WSW			3		8k		SW	0.013	0.33	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.82	757.4	30.37	771.4	40.4	4.7		WNW			3		10					Raining	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.35	770.9	51	10.6		W			4		8					Overcast	F. Lucas
Plymouth	30.37	771.4	30.44	773.2	49.7	9.8		NE			1		10					Gloomy	John Merrifield.
Roche's Point	30.38	771.6	30.42	772.7	49	9.4		ENE			3		5					¾ clouded	W. Kennedy.
Saint Ann's Head	30.27	768.8	30.44	773.2	50	10.0		WNW			1		2						John C. Walker.
Sandwick Manse, (Orkneys)			30.20	767.1	37.3	2.9		NW	24	10.7			0?					Snowing?	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.99	761.7	62.4	16.9		N			1		10					Misty	Sergt. W. H. Lyne.
Sheffield	30.07	763.8	30.32	770.1	45.6	7.6		N			2		5			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.30	769.6	30.33	770.4	50.3	10.2	57	NW			2		0			0	0	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory								NW			3		4					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			30.26	768.6	37	2.8		W			2		10					Overcast	John Smith.
Strathfield Turgiss	30.17	766.3	30.40	772.1	51.4	10.8		W			2		6					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.18	766.6	41	5.0		N			5		7					D. clouds	John Trotter.
Truro, Royal Institution			30.44	773.2	55	12.8		NW			2		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.39	771.9	49.2	9.6		SE	63	28.2			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					46	7.8		NW			4		2			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.83	757.7	29.87	758.7	73.0	22.8	65	SE	5	2.2		6	9						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.32	744.7	54.5	12.5	88	N			3		4k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.33	770.4	42.2	5.7		W			2		5k			0	0	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.84	757.9	30.03	762.8	77.4	25.2	68	WSW	10	4.5		6	4	W	SE	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	29.67	753.6	29.76	755.9	56.9	13.8	75	N	19	8.5			10			0.05	1.3	Threatening	R. L. J. Ellery.
Monach Lt-house, (Hebrides)			30.31	769.9	48	8.9		NW			3	10	5	W		0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			30.00	762.0	38	3.3		N			7	5	5	N		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. Algeria, N. 47° 16′, W. 31° 10′			29.66	753.4	59	15.0		SSW			3		10			15*	S;NE	Raining	Capt. W. Watson.
S. S. Batavia, S. 43° 40′, W. 47° 0′			29.40	746.7	54	12.2		SSW			2		7			6	WSW	D. clouds	Capt. J. E. Moulard.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 42° 25′, W. 56° 30′			29.31	744.5	48	8.9		N			7		10			6	NNE; WNW	Overcast	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 6′			29.57	751.1	57	13.9		S			4		6			7	SW	D. clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 49° 20′, W. 19° 25′			29.96	761.0	58	14.4		SSE			6					5	SW;SE	Rain and fog	Capt. Alex. Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.19	665.2			67.1	19.5	95	SE			2	5cs	1ks		E				Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.72	754.9	29.77	756.1	41.9	5.5	85	W			2		8						
Fanöe	29.84	758.0	29.86	758.5	42.6	5.9	60	WNW			6		8						
Godthaab, (Greenland)	29.88	759.0	29.93	760.1	30.6	—0.8	79	NE			4		2						
Stykkisholm, (Iceland)	30.07	763.7	30.11	764.8	31.5	— 0.3	96	SW			4		0						
Thorshavn, (Faröe)	30.15	765.8	30.19	766.7	37.4	3.0	62	NW			2		7						
Vestervig	29.57	751.0	29.74	755 3	40.8	4.9	76	W			6		4					Hailing	

NOTE.—The originals give the wind-force by the scale 0 to 9; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.88	759.0	30.43	773.0	55.4	13	71	SW			1		5		SW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.28	769.2	30.40	772.1	54.3	12.4	63	WSW			2		2		NW	0.417	10.6	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	30.23	767.7	30.30	769.7	56.5	13.6	35	NNW			6		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.88	759.0	30.50	774.8	48.4	9.1	42	NW			1		5ck		NNW	0.059	1.5	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.31	769.8	30.47	773.9	50.9	10.5	60	ESE	4.3	1.9					E	0	0		Albert Cheux.
Beauvais	30.15	765.9	30.45	773.4	50.0	10	55	NW			2		5		NW	0.08	2.	Cloudy	Normal School.
Besançon	29.56	750.7	30.47	774.0	46.8	8.2	65	NE			3		2		NE	0.181	4.6	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.52	749.7	30.45	773.3	48.7	9.3	66	N			6		2k		N	0.08	2.	Slightly cl'dy	Normal School.
Bourges, Normal School	29.85	758.1	30.42	772.6	47.1	8.4	75	SSE			2		2		SSE	0.12	3.	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	30.14	765.6	30.36	771.2	53.1	11.7	75	SSE			1		0		Calm	0.089	2.25	Hazy	The Staff.
Carcassonne, Normal School	29.93	760.2	30.35	770.9	56.3	13.5	88	E			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.37	771.3	30.44	773.2	64.8	18.2	80	E			4		5		E	0	0	Cloudy	Normal School.
Chartres, Normal School	29.87	758.6	30.45	773.3	56.1	13.4	91	NW			1		10		SE	0.067	1.7	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.11	764.8	30.44	773.1	48.2	9.0	63	W			2		5k		W	0.165	4.2	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D.Obs	29.04	737.7	30.43	773.0	50.4	10.2	52	N			1		0			0.024	0.6	Clear	Alluard, Director.
Commercy, Normal School	29.52	749.8	30.43	772.8	45.0	7.2	57	W			4		1k		W	0.268	6.8	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.09	738.9	30.23	767.9	55.6	13.1	35	NW			6		0			0	0	Clear	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.21	767.2	30.43	772.8	54.3	12.4	65	SE			2		2		SE	0.12	3.	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	30.17	766.2	30.48	774.2	48.7	9.3	61	SW			2		2		SW	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.49	749.1	30.39	772.0	47.7	8.7	76	SW			4		5		S	0.134	3.4	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.34	770.5	30.43	773.0	54.0	12.2	52	E			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.74	755.3	30.45	773.3	48.2	9	84	NE			6		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.26	743.2	30.34	770.6	45.0	7.2	66	WNW			2		2		ESE	0	0	Slightly cl'dy	Normal School
Nismes, Normal School	30.08	764.0	30.28	769.2	64.4	18	71	N			6		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	30.09	764 3	30.48	774.2	49.6	9.8	52	NE			2		2		NE	0.008	0.2	Slightly cl'dy	Bernard, Director.
Paris, Observatory	30.22	767.5	30.47	773.8	48.9	9.4	48	WNW			1		8k		WNW	0.076	1.93	Very cloudy	National Observatory.
Privas	29.28	743.6	30.35	771.0	56.3	13.5	40	N			2		5		S	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.44	773.1	30.47	773.9	56.5	13.6	67	ENE			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.35	771.0	30.44	773.2	54.1	12.3	52	NW			2		5		NW	0.134	3.4	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.20	741.6	30.28	769.0	59.9	15.5	44	W			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.71	754.7	30.44	773.2	50.5	10.3	76	NE			2		2		Calm	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.74	755.4	29.77	756.1	84.2	29										0.28	7.		L'Abbé Marchési.
Marseilles, Observatory			30.19	766.9	60.1	15.6	34	NW			8		0			0	0		The Staff.
Mont-Louis	25.11	637.9	30.43	772.9	48.4	9.1	34	ESE	13 0	5.83			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.17	766.3	30.45	773.3	50.0	10.0	50	WNW			2				WNW	0.051	1.3		Marié Davy, Director.
Perpignan			30.35	770.8	60.4	15.8	51	NE	16.8	7.50			4		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.47	545.4			38.3	3.5		SW			1		4					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.76	578.0			45.0	7.2		SW			2		4			6	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.29	769.4	30.46	773.6	51.8	11.0	52	NW			2		2k		NW	0	0	Slightly cl'dy	E. Renou.
Toulouse, Observatory	29.69	754.1	30.42	772.7	56.8	13.8	65	NNW			2		8			0	0		The Staff.
Tours	30.11	764.9	30.31	769.9	50.2	10.1		SE			1		8			0.091	2.3		C. Marquet.
Versailles, (near Paris)			30.45	773.4	50.4	10.2	56	NW			1		7			0.112	2.85	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.05	763.3	30.08	764.1	64.9	18.3	90	E	5.4	2.4		7ck		W		Inap.	Inap.	Lunar corona	Mare Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.92	760.0	30.09	764.3	48.9	9.4	51	SW			5		4			0.082	2.08		Prof. Arndt.
Breslau	29.58	751.3	30.11	764.8	44.2	6.8	70	WNW			5		4			0.017	0.43		Royal University Obs'y.
Carlsruhe	29.92	759.9	30.36	771.1	49.3	9.6	53	SW			2		5			0	0		Albert Senz.
Cassel	29.57	751.1	30.18	766.6	46.9	8.3	56	W			6		4	WSW		0	0		Dr. H. Möhl.
Crefeld	30.04	762.9	30.20	767.0	50.2	10.1	61	W			6		7k;ks			0.12	3.		Director Lose.
Emden	30.09	764.2	30.12	765.1	40.6	4.8	88	NW			5		10			0.327	8.3		Prof. Prestel.
Frankfort on the Main	29.98	761.5	30.35	771.0	51.1	10.6	28	WSW			4		7			0.087	2.2		Physical Society.
Friedrichshafen	28.95	735.2	30.43	772.8	44.2	6.8	80	WSW					5	NW		Blank	Blank		M. Wilhelm.
Hamburg	29.95	760.7	30.02	762.5	39.6	4.2	93	WSW			6		10			0.213	5.4	Raining	Captain F. Hegemann.
Kiel	29.92	759.9	29.93	760.3	42.1	5.6	78	W			4		3			0.200	5.08		Prof. G. Karsten.
Königsberg, (Prussia)	29.74	755.4	29.82	757.4	46.0	7.8	89	NW										Cloudy	Prof. E. Luther.
Köslin			29.88	759.0	39.9	4.4		S			2		0			0.398	10.1		H. Müller.
Leipsic, Observatory	29.79	756.7	30.22	767.6	46.6	8.1	54	WSW			4		5	WNW		0.150	3.8		Prof. Bruhns.
Memel, Naval School	29.82	757.3	29.86	758.5	45.5	7.5	79	Calm			0		10n					Raining	Reinbrechtvon Skalweit.
Neufahrwasser	29.88	759.0	29.90	759.4	40.8	4.9	90	NNW			2		10			0.441	11.2	Raining	A. Lothes.
Posen	29.68	753.9	29.98	761.5	44.6	7.0	68	NW			8		6			0.717	18.2	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.85	758.3	30.42	772.7	48.4	9.1	41	W			3		3	W		0.149	3.79		Dr. Schur.
Stuttgart	29.39	746.5	30.36	771.1	44.2	6.8	64	W			1		3	W		0	0		Prof. Schoder.
Treves, (Trier)	29.71	754.7	30.24	768.1	48.2	9.0	52	W			6		6			0.007	0.18		Prof. Flesch.
Weissenburg, (Bavaria)	28.77	730.8	30.32	770.0	44.6	7.0	41	WNW			3		6ks		W	0.028	0.7	Snow; graupel	Dr. Von Bebber.
Wustrow, Naval School	29.95	760.7	29.98	761.5	43.5	6.4	76	W			6		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedricasnafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.65	753.2	30.04	763.0	69.1	20.6		E					k					Clear	D. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.86	758.5	29.91	759.8	83.1	28.4	50	WSW	21.0?	9.4?			0			0	0	Blue sky	
Deesa	29.44	747.6	29.91	759.6	88.1	31.2	43	Calm					9	SSW		0	0	D. clouds	
Bombay	29.84	757.8	29.87	758.8	84.7	29.3	80	WSW	2.0	0.9			10	WSW		0	0	Overcast	
Poona	27.88	708.0	29.90	759.4	74.0	23.3	89	SW					10			0.38	9.6	Thunder-storm	
Lahore	29.13	740.0	29.88	758.9	80.6	27.0	43	Calm	3.3	1.5			0			0	0	Blue sky	
Belgaum	27.36	695.0	29.93	760.3	70.9	21.6	87	W	5.0	2.2			9		W	0.04	1.0	Raining	
Bangalore																			
Roorkee	28.92	734.6	29.81	757.1	84.8	29.3	39	Calm	1.4	0.6						0	0		
Agra	29.27	743.5	29.83	757.7	86.8	30.4	49	NW								0	0		
Trichinopoly																			
Nagpur	28.83	732.4	29.88	758.9	80.3	26.8	53	Calm	2.7	1.2			2			0	0	Blue sky	
Madras																			
Lucknow	29.48	748.8	29.85	758.2	86.2	30.1	55	Calm	1.0	0.4			2			0*	0	Blue sky	
Allahabad	29.54	750.2	29.85	758.1	81.7	27.6	61	Calm	1.9	0.8			0			0	0	Blue sky	
Patna	29.68	753.8	29.86	758.3	87.4	30.8	50	E	0.7	0.3			0			0	0	Blue sky	
Hazaribagh	27.88	708.1	29.90	759.5	76.0	24.4	63	W	4.6	2.1			0			0	0	Blue sky	
Cuttack	29.80	756.9	29.88	759.0	82.0	27.8	74	N	3.8	1.7			0			0	0	Blue sky	
Calcutta (Alipore)	29.87	758.7	29.89	759.2	79.6	26.4	78	WNW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.48	748.8	29.87	758.7	79.4	26.3	67	Calm	0.4	0.2			0			0	0	Blue sky	
Chittagong	29.79	756.7	29.88	759.1	78.5	25.8	75	N	3.5	1.6			0			0	0	Blue sky	
Sibsagar	29.56	750.7	29.89	759.3	78.6	25.9	78	WSW	1.4	0.6			6			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.54	724.8	29.90	759.5	80.5	26.9	61	NE	2.3	1.0			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.21	564.2	30.15	765.7	30.2	— 1.0	51	NE			6		2	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.22	564.5	30.21	767.2	25.9	— 3.4		W			2		5	SSE		0	0		Signora Ernesta Manfredi.
Udine	29.71	754.6	30.13	765.2	53.1	11.7	57	E	5.6	2.5			8			0.114	2.9		Prof. Giovanni Clodig.
Padua	29.98	761.4	30.09	764.2	57.4	14.1	64	ENE	9.4	4.2			2	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.90	759.4	30.10	764.4	59.5	15.3	52	SE	4.3	1.9			6	W		0	0		Conte Alm. Da Schio.
Verona	29.85	758.3	30.08	764.0	67.6	19.8	58	SE	12.5	5.6			10			0.157	4.0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.10	739.2	30.15	765.7	62.4	16.9	28	N			6		0			0	0		Prof. Giuseppe Calza
Milan	29.58	751.2	30.11	764.7	61.3	16.3	33	NE			4		0			0	0		Ab. Gio. Capelli.
Pavia	29.74	755.5	30.10	764.4	59.2	15.1	65	NE			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.19	741.5	30.12	765.0	61.9	16.6	40	SSE	5.6	2.5			0			0	0		Prof. P. F. Denza.
Mondovi	28.19	715.9	30.12	765.1	59.9	15.5	25	NW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.87	758.7	30.09	764.8	67.1	19.5	47	SSE			2		2			0	0		Prof. L. Vassallo.
Genoa	29.89	759.2	30.06	763.5	69.3	20.7	27	N	4.9	2.2			0			0	0		Prof. G. M. Garibaldi
Placenza	29.84	758.0	30.10	764.6	60.6	15.9	63	N	8.7	3.9			0			0	0		Dott. G Manzi.
Parma	29.76	756.0	30.10	764.4	62.6	17.0	56	NW			2		1			0	0		Prof. P. Pigorini.
Florence	29.81	757.1	30.07	763.7	67.6	19.8	51	W			2		7	W		0	0		Cav. F Meucci.
Leghorn	29.99	761.7	30.08	763.9	66.7	19.3	66	W	0.7	0.3			3			0	0		Prof. P. Monte.
Siena	28.84	732.5	30.06	763.5	63.7	17.6	52	W	0.7	0.3			4	W		0	0		Prof. L. Toscani.
Urbino	28.54	725.0	30.12	765.1	56.7	13.7	70	NE			2		3			0	0		Prof. P. Serpieri.
Pesaro	30.02	762.6	30.08	763.9	60.8	16.0	60	NNE	26.2	11.7			8			0	0		Prof. Luigi Guidi.
Ancona	29.96	760.9	30.07	763.7	62.2	16.8	67	NW			4		3			0	0		Prof. F. DeBosis.
Grosseto	29.93	760.3	30.05	763.2	68.4	20.2	62	WNW			2		3	SE		0	0		Avv. P. Ponticelli.
Rome	29.85	758.3	30.04	763.0	68.5	20.3	56	W			6		3			0	0		Prof. P. A Secchi.
Naples, O. U.	29.86	758.5	30.07	763.6	70.2	21.2	57	SW			4		3	W		0	0		Prof. L. Palmieri.
Lecce					66.9	19.4	52	WSW	2.5	1.1			9			0	0		Prof. C. De Giorgi.
Cosenza	29.21	741.9	30.10	764.6	63.9	17.7	77	SE	0	0			10			0.059	1.5		Prof. F. D. Conti.
Cagliari	29.87	758.7	30.06	763.5	60.8	16.0	70	NW			6		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.01	762.3	30.06	763.5	69.4	20.8	63	E			2		7	SE		0	0		Prof. F. Cafiero.
Palermo	29.80	757.0	30.06	763.4	68.5	20.3	41	NE	1.8	0.8			9			0	0		Prof. G. Cacciatore.
Caltanissetta	28.11	713.9	30.05	763.2	64.9	18.3	52	WNW			4		4			0	0		Prof. A. Pagani.
Syracuse	29.95	760.7	30.02	762.6	69.8	21.0	60	E			2		5	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.52	749.8	30.08	763.9	66.2	19.0	71	SE	1.8	0.8			8			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.07	763.8	30.17	766.2	57.7	14.3	94	ESE		0.4		1c		SW		0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.12	587.2	30.16	766.0	58.1	14.5	67	SW	0.2	0.08		0	0			0	0	Blue sky	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,495 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.30	769.5	30.30	769.5	48.9	9.4		W			5					0.358	9.1		
Groningen	30.02	762.4	30.07	763.8	40.8	4.9		NW			4					0.433	11.0		
Helder	30.16	766.0	30.16	766.0	47.1	8.4		NW			6					0.346	8.8		
Hellevoetsluis			30.24	768.0	48.6	9.2	69	WNW			6								H. v d Brink.
Utrecht	30.15	765.7	30.19	766.9	51.8	11.0	60	W			5		8			0.126	3.2	Very cloudy	

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.71	754.6	29.76	756.0	37.4	3.0	83	NNW	7.4	3.3			4			0.008	0.2		
Bröno	29.55	750.6	29.59	751.6	37.4	3.0	66	N	29	13			8			0.579	14.7	Light rain	
Christiania	29.50	749.3	29.65	753.1	41.7	5.4	66	SW	4	2			2			0	0		
Tromsö	29.41	746.9	29.45	748.0	33.4	0.8	68	Calm	0	0			10			0.059	1.5		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.92	759.9	30.11	764.7	69.8	21.0	89	SW	6.3	2.8			3			0.276	7.0		Dr. J. A. Sampaio
Campo Major	29.25	743.0	30.25	768.4	73.9	23.3	46	ESE	6.3	2.8			5			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.16	766.0	30.23	767.8	72.0	22.2	64	Calm	0	0			2			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.90	759.5	30.26	768.5	67.3	19.6	55	NE	7.4	3.3			2			0	0		The Staff.
Ponta Delgada, (Azores)	30.08	763.9	30.15	765.7	72.3	22.4	84	S					4			0.476	12.1		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

NAVAL SERIES. VESSELS.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.50	749.4	29.93	760.3	45.7	7.6	76	W	16	7			9						Astronomical Obs.
Wilna	29.48	748.8	29.90	759.5	51.4	10.8	60	S	2	1			4						Astronomical Obs.
Dorpat	29.55	750.6	29.80	756.8	49.1	9.5	74	SW	9	4			5						Prof. Dr. Weihrauch.
St. Petersburg	29.73	755.1	29.74	755.5	44.6	7.0	88	W	4	2			10						Central Physical Obs.
Kuopio	29.30	744.2	29.62	752.4	44.8	7.1	81	SSW	13	6			2						Ch. Forsten.
Kieff	29.27	743.5	29.90	759.5	54.3	12.4	86	SW	4	2			10						Physical Cabinet
Nikolaiev	29.97	761.2	30.04	763.0	47.5	8.6	89	Calm	0	0			0						Kurdakof.
Kertch	29.97	761.1	29.98	761.6	60.4	15.8	83	SSE	4	2			3						Lugorio.
Moscow	29.38	746.3	29.93	760.3	46.8	8.2	89	S	9	4			10						Meteorological Obs.
Lugan	29.83	757.7	30.04	762.9	52.0	11.1	64	E	22	10			6						Meteorological Obs.
Archangel	29.65	753.0	29.67	753.5	44.4	6.9	86	Calm	0	0			10						Ogorodnikof.
Tiflis	28.78	731.0	30.19	766.9	61.3	16.3	82	Calm	0	0			8					Raining	Physical Observatory.
Astrakhan	30.19	766.8	30.11	764.7	59.2	15.1	63	ESE	7	3			5						Sebastianof.
Kasan	29.82	757.3	30.09	764.3	48.7	9.3	66	SSW	9	4			10						Physical Cabinet
Orenburg	30.06	763.4	30.44	773.2	40.1	4.5		NE	13	6			3						Tschernischei.
Ekaterinburg	29.26	743.1	30.21	767.2	51.4	10.8	60	SSW	4	2			4						Meteorological Obs.
Nukuss	30.01	762.2	30.24	768.0	66.0	18.9	37	NE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.67	728.2	30.39	772.0	55.4	13.0	87	Calm	0	0			0					Foggy	Michelson.
Barnaul	29.80	756.9	30.34	770.6	36.5	2.5	70	W	4	2			10						Meteorological Obs.
Yeniseisk	29.68	753.9	29.83	757.6	28.8	— 1.8	87	WSW	4	2			10					Snowing	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.89	759.1	30.03	762 7	49.3	9.6	98	Calm	0	0			0					Foggy	Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					33.3	0.7	90	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.09	713.4	30.30	769.6	64.9	18.3	52	S	5.2	2.33		1	0	NNW		0	0	Almost clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
SUB-SERIES.																			
Havana, Cuba, W. I.	29.89	759.2	29.97	761.3	79.8	26.6	78	ENE	7.2	3.2		0	1k		ENE	0.165	4.2	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.13	765.4	30.23	767.8	75.7	24.3	51	ESE	32.6	14.6		0	1		NE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.78	756.5	83.1	28.4	84	SE	2.5	1.10		3cs	1k			0.669	17.00	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.45	748.1	29.49	749.1	39.6	4.2	.....	SW	.....	.....	4	.....	1	.....	.....	0	0	.....	
Umea	29.48	748.9	29.54	750.2	41.7	5.4	63	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Hernosand	29.52	749.7	29.57	751.0	39.6	4.2	84	SSW	.....	.....	2	.....	8	.....	.....	0	0	.....	
Stockholm	29.48	748.9	29.66	753.4	42.8	6.0	80	SSW	.....	.....	4	.....	3	.....	.....	0	0	.....	
Wisby	29.70	754.4	29.76	755.9	43.2	6.2	65	W	.....	.....	6	.....	3	.....	.....	0.031	0.8	.....	
Sub-Series.																			
Upsala	29.57	751.1	29.65	753.0	43.0	6.1	55	SW	13.7	6.1	.....	.....	4	SSW	WSW	0	0	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.93	734.9	30.37	771.4	50.5	10.3	41	NE	.....	.....	1	.....	1	.....	.....	0.012	0.3	.....	The Observatory.
Zurich	28.74	729.9	30.40	772.1	46.6	8.1	60	W	.....	.....	2	.....	8	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +8.8 mm; Thermometer, —2.3 cent.; Relative Humidity, —31 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.04	762.9	60.8	16.0	79	NE	9	4.0	.....	.....	7	.....	NNE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.07	763.8	76.6	24.8	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanides.
Valona	.....	.....	30.09	764.3	66.6	19.2	.....	NW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.97	761.3	82.0	27.8	55	W	.....	.....	2	.....	3ks;k	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.30	769.6	39	3.9	.....	Calm	0	0	.....	.....	8s	.....	NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.78	756.4	37	2.8	66	NW	20	8.9	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.64	752.8	41	5.0	65	NW	15	6.7	.....	.....	10s	.....	Calm	0.020	0.51	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.05	763.3	30.26	768.3	37.0	2.8	98	NW	.....	.....	1	3cs	0	NW	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.87?	758 ??	29.70?	754.47	.....	.....	.....	W	.....	.....	3	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.04	763.0	36	2.2	66	NW	24	10.7	.....	2cs	0	W	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B.	29.86	758.4	29.93	760.2	36.0	2.2	64	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.22	767.6	30	— 1.1	98	SE	2	0.9	.....	2c	2ks	S	S	0	0	Fair	James Stewart.
Goderich, Ontario	29.41	747.0	30.21	767.3	49.9	9.9	89	SW	.....	.....	1	10k	0.	SW	.....	0	0	Cloudy	H. J. Strang, M. A
Granton, Ontario	29.10	739.1	30.21	767.3	47	8.3	92	E	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S.	29.57	751.1	29.71	754.6	38	3.3	69	NW	24	10.7	.....	0	5ks	.....	NW	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.89	759.2	30.26	768.6	52.2	11.2	86	NE	.....	.....	2	10cs	0	.....	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.03	737.3	29.06	738.1	40	4.4	73	NW	.....	.....	4	.....	10n	.....	.....	0.05	1.3	Overcast	E. Weedon.
*Kingston, Ontario	29.93	760.2	30.21	769.9	41	5.0	91	NE	2	0.9	.....	10cs	0	Calm	.....	0	0	Cloudy	S. Woods, M. A
*Montreal, Quebec	30.02	762.5	30.23	767.8	42	5.6	62	W	5	2.2	.....	2c	2ks	.....	.....	0.01	0.3	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.59	751.6	30.30	769.6	42	5.6	91	E	2	0.9	.....	8k	2ks	E	E	0	0	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.53	750.0	30.30	769.6	42.5	5.8	87	Calm	.....	.....	0	.....	1s	.....	.....	0	0	Hazy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.52	749.8	30.22	767.6	48	8.9	93	NE	5	2.2	.....	10k	0	W	.....	0	0	Fair	H Morgan.
Port Hastings, N. S.	29.46	748.3	29.51	745.5	31.2	— 0.4	.....	N	15	6.7	.....	.....	.....	.....	.....	0.20	5.1	Dark	Peter Grant
Port Stanley, Ontario	29.55	750.6	30.20	767.1	49	9.4	93	E	3	1.3	.....	.....	10ks	.....	E	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.80	756.9	30.13	765.3	40	4.4	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.85	758.2	30.32	770.1	35	1.7	100	NW	4	1.8	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	W. H. McIntyre.
St. John, N. B.	29.74	755.4	29.91	759.7	35	1.7	80	NW	12	5.4	.....	0	0	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.48	748.8	30.19	766.8	49	9.4	92	SE	4	1.8	.....	.....	10ks	.....	W	0.01	0.3	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	30.22	767.6	45	7.2	92	SE	3	1.3	.....	.....	10n	.....	Calm	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.93	734.8	30.23	767.8	46.8	8.2	95	E	7	3.1	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.40	746.7	29.43	747.5	42	5.6	72	NW	12	5.4	.....	.....	10ks	.....	NW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.88	758.9	30.27	768.8	48	8.9	83	NE	6	2.7	.....	.....	10ks	.....	N	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.	29.67	753.6	29.77	756.1	38.0	3.3	62	NW	16	7.2	.....	2k	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	40.0	4.4	91	NW	.....	.....	.....	10ks	10ns	.....	.....	0.11	2.8	Cloudy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.99	761.7	30.23	767.8	40	4.4	82	NW	4	1.8		0	0			Inap.	Inap.	Clear	
Alpena, Michigan	29.52	749.8	30.17	766.3	51	10.6	86	SE	14	6.3			10n		SE	0.04	1.0	Light rain	
Atlantic City, New Jersey	30.18	766.6	30.20	767.1	53	11.7	79	N	14	6.3		1k	0	NE		0	0	Clear	
Augusta, Georgia	29.99	761.7	30.17	766.3	59	15.0	88	N	2	0.9		0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	30.18	766.6	30.22	767.6	56	13.3	68	N	4	1.8		Haze	2s; sm	Calm	NW; Calm	0	0	Fair	
Barnegat, New Jersey	30.17	766.3	30.20	767.1	56	13.3	57	NE	19	8.5		2cs	2s	Calm	NE	0	0	Fair	
Bismarck, Dakota	28.32	719.3	30.05	763.3	35	1.7	90	E	4	1.8			10s		SE	0.01	0.3	Cloudy	
Boise City, Idaho	27.28	692.9	29.92	760.0	45	7.2	60	E	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	30.00	762.0	30.16	766.1	42	5.6	65	W	9	4.0		4c	1cs	NW		0.10	2.5	Fair	
Brackettville, Texas	28.77	730.7	29.77	756.1	66	18.9	68	NE	3	1.3			10s		Calm	0.05	1.3	Cloudy	
Breckenridge, Minnesota	29.06	738.1	30.08	764.0	39	3.9	95	N	6	2.7			10ks		Calm	0	0	Cloudy	
Brownsville, Texas	29.81	757.2	29.87	758.7	77	25.0	90	NE	4	1.8			10s		Calm	2.28	57.9	Cloudy	
Buffalo, New York	29.50	749.3	30.22	767.6	50	10.0	86	NE	5	2.2			10s		NE	0	0	Cloudy	
Burlington, Vermont	29.99	761.7	30.26	768.6	39	3.9	91	N	1	0.4		0	0			0.16	4.1	Clear	
Cairo, Illinois	29.64	752.8	30.02	762.5	67	19.4	79	SE	5	2.2			10s		S	0	0	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.77	680.0	30.26	768.6	42	5.6	83	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.04	763.0	30.05	763.3	67	19.4	84	NE	6	2.7		0	0			0	0	Clear	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	65	18.3	73	NE	22	9.8		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	66	18.9	89	NW	8	3.6		1c	0	NW		0	0	Clear	
Cape May, New Jersey	30.16	766.1	30.18	766.6	54	12.2	73	N	10	4.5		0	0			0	0	Clear	
Charleston, South Carolina	30.08	764.0	30.14	765.5	66	18.9	84	N	6	2.7		0	0			0	0	Clear	
Cheyenne, Wyoming	24.12	612.6	30.06	763.5	31	— 0.6	89	NW	8	3.6		0	0			0.02	0.5	Clear	
Chicago, Illinois	29.24	742.7	29.90	759.4	64	17.8	78	S	8	3.6			10s		Calm	Inap.	Inap.	Cloudy	
Cincinnati, Ohio	29.39	746.5	30.03	762.7	54	12.2	86	SE	2	0.9			Fog		SE	0	0	Dense fog	
Cleveland, Ohio	29.45	748.0	30.18	766.6	50	10.0	86	SE	6	2.7		8ck	0	SE		Inap.	Inap.	Fair	
Concho, Texas					53	11.7	73	NE	6	2.7		8cs	0	NE		0	0	Cloudy	
Corsicana, Texas	29.49	749.0	29.95	760.7	61	16.1	100	N	2	0.9			10s		Calm	0.99	25.1	Cloudy	
Davenport, Iowa	29.33	745.0	29.96	761.0	57	13.9	87	W	8	3.6			10s		Calm	1.96	49.8	Cloudy	
Denison, Texas	29.29	744.0	29.98	761.5	57	13.9	87	N	7	3.1			10ks		N	0.02	0.5	Cloudy	
Denver, Colorado	24.92	633.0	30.14	765.5	30	— 1.1	79	S	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.44	747.8	30.11	764.8	53	11.7	93	E	3	1.3		5cs	1s	NW	Calm	0	0	Fair	
Dodge City, Kansas	27.46	697.5	29.78	756.4	43	6.1	91	N	16	7.2		0	8s		N	0.06	1.5	Cloudy	
Dubuque, Iowa	29.22	742.2	29.91	759.7	55	12.8	87	NW	5	2.2			10s		Calm	1.67	42.4	Cloudy	
Duluth, Minnesota	29.36	745.7	30.04	763.0	45	7.2	84	SE	10	4.5			10n		Calm	0.06	1.5	Light rain	
Eagle Pass, Texas	29.16	740.7	29.89	759.2	63	17.2	94	Calm	0	0			10n		Calm	0.01	0.3	Light rain	
Eastport, Maine	29.86	758.4	29.93	760.2	37	2.8	62	NW	19	8.5		0	0			0.06	1.5	Clear	
Erie, Pennsylvania	29.47	748.5	30.19	766.8	50	10.0	86	SE	1	0.4		5c	Sm'e			0	0	Fair	
Escanaba, Michigan	29.39	746.5	30.04	763.0	53	11.7	93	E	7	3.1			10n		Calm	1.23	31.2	Light rain	
Florence, Arizona	28.32	719.3	29.92	760.0	60	15.6	44	W				0	0			0	0	Clear	
Fort Bayard, New Mexico	23.98	609.1	29.98	761.5	41	5.0	91	Calm	0	0			10s		SW	0.47	11.9	Cloudy	
Fort Craig, New Mexico	25.47	646.9			42	5.6	100	NW	6	2.7			10n		Calm	0.55	14.0	Light rain	
Fort Gibson, Indian Ter	29.45	748.0	29.99	761.7	55	12.8	87	N	9	4.0			10s		N	0.06	1.5	Cloudy	
Fort Griffin, Texas																			
Fort St. Michael, Alaska															NW	Inap.	Inap.	Light rain	
Fort Sill, Indian Territory	28.82	732.0	29.94	760.5	50	10.0	93	NW	8	3.6			10n		Calm	0	0	Cloudy	
Fort Sully, Dakota	28.38	720.8	30.09	764.3	36	2.2	90	NW	4	1.8			10s		Calm	1.46	37.1	Threatening	
Galveston, Texas	29.89	759.2	29.93	760.2	71	21.7	95	NE	3	1.3			10s		SW	Inap.	Inap.	Light rain	
Grand Haven, Michigan	29.35	745.5	30.00	762.0	53	11.7	86	E	11	4.9			10n			0	0	Fair	
Indianapolis, Indiana	29.27	743.4	30.04	763.0	57	13.9	81	SE	1	0.4		8cs; ck	Sm'e	W	SE	4.44	112.8	Cloudy	
Indianola, Texas	29.89	759.2	29.91	759.7	69	20.6	90	NE	20	8.9			10s						
Jacksboro, Texas															Calm	0.04	1.0	Foggy	
Jacksonville, Florida	30.07	763.8	30.09	764.3	69	20.6	95	NE	5	2.2			Fog		Calm	0.75	19.1	Light rain	
Keokuk, Iowa	29.32	744.7	29.93	760.2	56	13.3	87	N	6	2.7			10n		NE	Inap.	Inap.	Fair	
Key West, Florida	29.94	760.5	29.97	761.2	78.0	25.6	82	NE	4	1.8		5k	Haze	NE		0	0	Clear	
Kittyhawk, North Carolina	30.09	764.3	30.12	765.0	67	19.4	90	NE	22	9.8		0	0		Calm	0	0	Dense fog	
Knoxville, Tennessee	29.17	740.9	30.19	766.8	49	9.4	93	N	4	1.8			Fog			0.82	20.8	Light rain	
La Crosse, Wisconsin	29.20	741.7	29.93	760.2	49	9.4	100	N	4	1.8			10n	N		0.62	15.7	Cloudy	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	46	7.8	92	Calm	0	0			10s			0.11	2.8	Light rain	
Laredo, Texas					66	18.9	94	N	4	1.8			10n		Calm	0.17	4.3	Cloudy	
Leavenworth, Kansas	29.19	741.4	30.04	763.0	49	9.4	85	N	7	3.1			10s			0	0	Clear	
Los Angeles, California	29.64	752.8	29.98	761.5	53	11.7	68	N	4	1.8		0	0			0	0	Fair	
Louisville, Kentucky	29.51	749.5	30.06	763.5	58	14.4	87	SE	2	0.9		5c	Fog	S	SE	0	0	Clear	
Lynchburg, Virginia	29.51	749.5	30.19	766.8	61	16.1	70	NE	2	0.9		0	0			0	0	Clear	
Maricopa Wells, Arizona					51	10.6	27	W				0	0			0	0	Clear	
Marquette, Michigan	29.32	744.7	30.01	762.2	54	12.2	73	E	2	0.9			10n		Calm	0.61	15.5	Light rain	
Mason, Texas	28.35	720.1	30.08	764.0	59	15.0	94	Calm	0	0			10s		N	0.25	6.3	Cloudy	
Memphis, Tennessee	29.68	753.9	29.98	761.5	68	20.0	90	SE	4	1.8			10s		SE	0.05	1.3	Cloudy	
Milwaukee, Wisconsin	29.26	743.2	29.93	760.2	57	13.9	100	S	12	5.4			10n		SE	0.65	16.5	Heavy rain	
Mobile, Alabama	30.00	762.0	30.04	763.0	71	21.7	92	SE	6	2.7			10s		Calm	0	0	Cloudy	
Montgomery, Alabama	29.87	758.7	30.10	764.5	64.5	18.1	81	E	3	1.3		10c	Haze	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.10	739.1	30.15	765.8	57	13.9	80	Calm	0	0			Fog			0	0	Foggy	
Mt. Washington, N. H.	23.66	601.0	30.02	762.5	21	— 6.1	85	N	90	40.2		0	2ks		N	0.66	16.8	Clear	
Nashville, Tennessee	29.56	750.8	30.09	764.3	57	13.9	87	SE	1	0.4		5cs	0	Calm		0	0	Fair	
New Haven, Connecticut	30.08	764.0	30.20	767.1	47	8.3	71	N	2	0.9		Haze	0	Calm		0	0	Clear	
New London, Connecticut	30.14	765.5	30.19	766.8	48	8.9	70	Calm	0	0		0	1s		Calm	0	0	Clear	
New Orleans, Louisiana	29.88	758.9	29.94	760.5	72	22.2	90	SE	12	5.4			10ks		SE	0.47	11.9	Cloudy	
Newport, Rhode Island	30.12	765.0	30.17	766.3	46	7.8	67	NW	7	3.1		4k	0	NW		0	0	Fair	
New York, New York	30.06	763.5	30.24	768.1	49	9.4	64	W	4	1.8		0	Fog		Calm	0	0	Clear	
Norfolk, Virginia	30.09	764.3	30.15	765.8	63	17.2	83	NE	7	3.1		1c	0	Calm		0	0	Clear	
North Platte, Nebraska	27.15	689.6	29.80	756.9	33	0.6	79	W	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	30.03	762.7	30.07	763.8	44	6.7	100	SE	1	0.4			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	28.93	734.8	30.02	762.5	45	7.2	84	NW	7	3.1			10s		NW	0.01	0.3	Cloudy	
Oswego, New York	29.94	760.5	30.27	768.8	48	8.9	71	E	5	2.2		10cs	Sm'e	Calm		0	0	Cloudy	
Pembina, Dakota	29.34	745.2	30.19	766.8	33	0.6	90	NW	1	0.4		10k	0	Calm		Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	30.20	767.1	30.25	768.3	50	10.0	71	NE	16	7.2		0	0			0	0	Clear	
Phœnix, Arizona					47	8.3	62	Calm				0	1s		Calm	0	0	Clear	
Pike's Peak, Colorado	17.77	451.3	29.98	761.5	6	—14.4	75	Calm	0	0		8c	0	E		0	0	Fair	
Pioche, Nevada	24.10	612.1	29.87	758.7	37	2.8	39	N	2	0.9		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.34	745.2	30.16	766.1	51	10.6	86	E	5	2.2		2c	Fog	Calm	Calm	0	0	Fair	
Port Huron, Michigan	29.48	748.8	30.15	765.8	50	10.0	93	SE	4	1.8			10ks		SE	0	0	Cloudy	
Portland, Maine	30.04	763.0	30.09	764.3	45	7.2	60	W	6	2.7		2k	Fog	Calm		0.08	2.0	Fair	
Portland, Oregon	30.02	762.5	30.12	765.0	51	10.6	93	N	4	1.8		0	0			0	0	Clear	
Prescott, Arizona	24.76	628.9	30.12	765.0	36	2.2	61	Calm				0	0			0.27	6.9	Clear	
Punta Rassa, Florida	30.00	762.0	30.01	762.2	73	22.8	85	NE	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.62	752.3	29.97	761.2	55	12.8	33	NW	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.62	752.3	30.24	768.1	47	8.3	77	SE	5	2.2		2c	5s; hz	Calm	NW; Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.51	749.5	30.09	764.3	42	5.6	96	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Sacramento, California	29.91	759.7	29.99	761.7	51	10.6	46	SE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.39	746.5	29.94	760.5	68	20.0	89	S	8	3.6			10n		Calm	0.02	0.5	Light rain	
St. Marks, Florida	30.09	764.3	30.10	764.5	66	18.9	94	NE	4	1.8		0	0			0	0	Clear	
St. Paul, Minnesota	29.13	739.9	29.96	761.0	44	6.7	92	NW	5	2.2			10n		Calm	0.14	3.6	Light rain	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.73	653.5	30.06	763.5	40	4.4	56	NE	2	0.9		0	0			0	0	Cloudy	
San Antonio, Texas	29.22	742.2	29.79	756.7	64	17.8	94	NE	8	3.6			10ks		NE	2.28	57.9	Cloudy	
San Diego, California	29.94	760.5	30.01	762.2	58	14.4	87	NE	4	1.8		0	5s		Calm	0	0	Fair	
Sandusky, Ohio	29.46	748.3	30.13	765.3	55	12.8	73	SE	8	3.6		4c	Haze	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.21	767.3	30.23	767.8	49	9.4	63	NE	11	4.9		0	Sm'e			0	0	Clear	
San Francisco, California	29.94	760.5	30.01	762.2	52	11.1	86	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.22	589.8	29.76	755.9	38	3.3	90	NE	1	0.4			10s		SE	0.05	1.3	Threatening	
Savannah, Georgia	30.05	763.3	30.14	765.5	64	17.8	94	NE	4	1.8		0	Fog			0	0	Clear	
Shreveport, Louisiana	29.73	755.1	29.94	760.5	68	20.0	95	N	2	0.9			10s		Calm	2.20	55.9	Cloudy	
Smithville, North Carolina	30.13	765.3	30.16	766.1	64	17.8	94	N	5	2.2		0	0			0	0	Clear	
Springfield, Massachusetts	30.00	762.0	30.13	765.3	45	7.2	68	N	1	0.4		2c		NW		0	0	Fair	
Stanwix, Arizona																			
Stockton, Texas	26.94	684.3	29.94	760.5	52	11.1	100	Calm	0	0			10s		Calm	0.16	4.1	Cloudy	
Thatcher's Island, Mass.	30.08	764.0	30.13	765.3	44	6.7	75	NW	16	7.2		2cs	0	NW		0.20	5.1	Fair	
Toledo, Ohio	29.43	747.5	30.10	764.5	55	12.8	80	N	3	1.3		2c	0	NW		0	0	Fair	
Tucson, Arizona	27.49	698.2	30.04	763.0	60	15.6	70	Calm				2ck	0	Calm		0	0	Fair	
Tybee Island, Georgia	30.09	764.3	30.12	765.0	70	21.1	90	NE	10	4.5		0	0			0	0	Clear	
Umatilla, Oregon	29.84	757.9			41	5.0	91	SE	7	3.1		0	0			0	0	Clear	
Vicksburg, Mississippi	29.73	755.1	29.98	761.5	71	21.7	90	SE	4	1.8			10s		SE	0.44	11.2	Cloudy	
Virginia City, Montana	24.41	620.0	29.89	759.2	34	1.1	69	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.65	753.1	30.03	762.7	48	8.9	62	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	30.11	764.8	30.22	767.6	57	13.9	76	N	6	2.7		2ck	8ks	NW	NW	0	0	Cloudy	
Wickenburg, Arizona					43	6.1	35	NW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.05	763.3	30.13	765.3	61	16.1	83	NW	3	1.3		0	0			0	0	Clear	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	32	0.0	60	S	7	3.1		0	0			0	0	Clear	
Wood's Holl, Mass.	30.10	764.5	30.16	766.1	48	8.9	62	N	12	5.4		5c	0	NW		0	0	Fair	
Yankton, Dakota	28.79	731.3	30.12	765.0	36	2.2	90	E	1	0.4			Fog		Calm	0	0	Foggy	
Yuma, Arizona	29.80	756.9	29.97	761.2	60	15.6	44	N	5	2.2		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.74	755.4	29.80	756.9	42.0	5.6	96	SW	12	5.4		2ck	3s	N	N	0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.91	759.7	29.93	760.2	81	27.2	74	SE	2.4	1.1		0	4ks		NE	0.16	4.1	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.03	762.7	30.04	763.0	82	27.8	87	Calm	0	0		2c	2s	Calm		0	0		James Gall.
Navassa, W. I.	29.78	756.4	29.86	758.4	83.5	28.6		SE			1					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					85	29.4	71	SE	2	0.9		2c	4k	E					G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.75	755.6	29.77	756.1	83	28.3	87	SE				2k	2ks		SE				L. V. Bigard.
Paramaribo, D. Guiana, S. A.			29.99	761.7	85	29.4	72	E			3	3c	6k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.19	639.8			66.5	19.2	82	Calm			0	4cs	5ks			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.8 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.00	762.0	58	14 4	53	11.7	93	SW	13	5.8			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.19	766.8			73	22.8	85	ENE	6	2.7			10		NW	0.25	6.3			D. clouds	
Navy Yard, Portsmouth, N.H	30.16	766.1	69	20.6	42	5.6	75	W	5	2 2						0.15	3.8			Clear	
Naval Hospital, Yokohama, Japan	30.07	763.8	65	18 3	57.5	14.2	94	Calm			0		2s;sm'.		Calm	0	0			Fair	
Adams. Buenos Ayres	30.20†	767.1†	60	15.6	59	15.0	59	NW			0		1		N	0	0			Blue sky	
Alert. N 40° 30′, E. 133° 10′	30.20†	767.1†	59	15.0	59	15.0	82	NE			2		7		NE			Smooth		D. clouds	
Alliance, Constantinople, Turkey.	30.10	764.5	64	17.8	62	16.7	88	NE			2		10		N&E					Overcast	
Ashuelot. Tientsin, China	30.08	764.0	66	18.9	55	12.8	93	N			1		5		N			Smooth		D clouds	
Canonicus, New Orleans, La	29.99	761.7	54	12.2	73	22.8	90	SE			2		10							Cloudy	
Colorado, New York, N. Y	30.28	769.1	59	15.0	50	10.0	72	NNE	12	5.4			4		NNW					Light fog	
Despatch, Mudania, Turkey	30.13	765.3	70	21.1	65	18.3	73	NW			1		10		Calm			Smooth		Cloudy	
Franklin, Norfolk, Va	30.20	767.1	63	17.2	66	18.9	100	NE	7	3.1					NE	0	0				
Frolic, N. 32° 08′, W. 74° 13′	30.24	768.1	75	23.9	76	24.4	82	N&E			2		5k		Calm	0	0	Smooth		Squally	
Gettysburg, Castel-a-mare, Italy	29.88‡	758.9‡			76	24.4	95	W			3–4		8		Calm	0	0			D. clouds	
Kearsarge, N. 7° 47′, E. 71° 15′	29.89	759.2			84	28.9	91	W			1		3			0.2	5	smooth	S	D. clouds	
Lackawana, Esquimault, B. C	30.10	764.5			51	10.6	86	Calm			0		0					Smooth		Blue sky	
Marion, Smyrna, Turkey	30.00	762.0	70	21.1	72	22.2	54	ENE			2		5		Calm	0	0	Smooth		D. clouds	
Michigan, Lake Michigan	29.40	746.7	63	17.2	56	13.3	94	ESE			3		10		SE					Raining	
Monocacy, Yokohama, Japan	30.08	764 0	63	17.2	60	15.6	94	W			0		1		N	0	0	Smooth		Hazy	
Monongahela, N. 37° 12′, W. 31° 21′	30.16	766.1	71	21.7	71	21.7	90	SW			2–3		8					Smooth	S&W	D. clouds	
New Hampshire, Port Royal, S. C	30.32	770.1			69	20.6	90	Calm	0	0			0			0	0			Blue sky	
Omaha, Valparaiso, Chili	30.06	763.5	64	17.8	59.5	15.3	76	Calm	0	0			0			0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.06†	763.5†	68	20.0	68	20.0	95	SE			1		10					Long	W	Overcast	
Ossipee, Portland, Me	30.03	762.7	65	18.3	44	6.7	68	NW			2		3		Calm					D. clouds	
Palos, Shanghai, China	30.14	765.5	68	20.0	66	18 9	100	E			0–1		5		E						
Pensacola, Mare Island, Cal	30.06	764.3			58	14.4	97	SW			1		0			0	0			Clear	
Plymouth, Norfolk, Va	30.45†	773.4†	70	21.1	66	18.9	89	ENE			1		1							Clear	
Ranger, Shanghai, China	30.16	766.1			70	21.1	80	E			1		3		Calm			None		Pleasant	
Rio Bravo, Brownsville, Texas	29.75	755.6			80	26.7	96	E			2–5		10							Thunder-storm	
Santee, Annapolis, Md	30.28	769 1	65	18.3	59	15.0	76	NE			2		4		NW	0	0			Clear	
St. Louis, League Island, Pa	30.14	765.5	56	13.3	59	15.0	??	NNE	11	4.9			0			0	0			Clear	
Swatara, New York, N. Y	30.25	768.3			55	12.8	74	NW			1		0							Blue sky	
Tennessee, Yokohama, Japan	30.14	765.5	66	18.9	62	16.7	77	W	2	0.9			3		Calm			Smooth		Misty	
Trenton, Marseilles, France	30.28†	769.1†	68	20.0	50	10.0	??	N	20	8.9			1		N	0	0			D. clouds	
Vandalia, Villefranche, France	30.12	765.0	71	21.7	70	21.1	57	SSW			0–1		0							Blue sky	
Wabash, Boston, Mass	30.15	765.8	51	10.6	46	7.8	84	NW	7	3.1			7		NW	0.03	0.8			D. clouds	
Wyoming, Washington, D. C	30.30†	769.6†	69	20.6	65	18.3		Calm			0		7		N&W					Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

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S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.08*	764.0*	75	23.9	95	ESE			5		10		SE	Smooth		Misty	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
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S. S. Georgia																			Capt. Cavarly.
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NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

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S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 43° 51′, E. 162° 25′			29.87*	758.7*	57	13.9	??	ESE			4		k		SE	Swell	E&NE	Overcast	Capt. W. H. Kidley.
S. S. Oceanic, N. 31° 14′, E. 150° 00′			29.84	757.9	75	23.9	90	NNE			4		8		SEtoNE	Long	SE	0 clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 40° 10′, W. 23° 35′			29.86	758.2	65.0	18.3	78	S			1-2		k		S	Long	SW	Overcast	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Mouth of Mersey			30.43*	772.9*	60	15.6	94	WNW			8		1		NNW			Squally	Captain Sargent.
S. S. Ohio, N. 48° 15′, W. 49° 50′			29.07	738 4	41	5.0	96	SW			6				SW	Moderate	WSW	Clear	Captain Morrison.
S. S. Pennsylvania, N 45° 30′ W. 38° 22′			29.47†	748.5†	55	12.8	93	WSW			8		4		W	High	WNW	Squally	Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 32° 26′, W. 78° 53′			30.16	766.1	77	25.0	73	NE	12	5.4		5k	0	E		Swell	SE	D. clouds	Capt. James Jorgensen.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

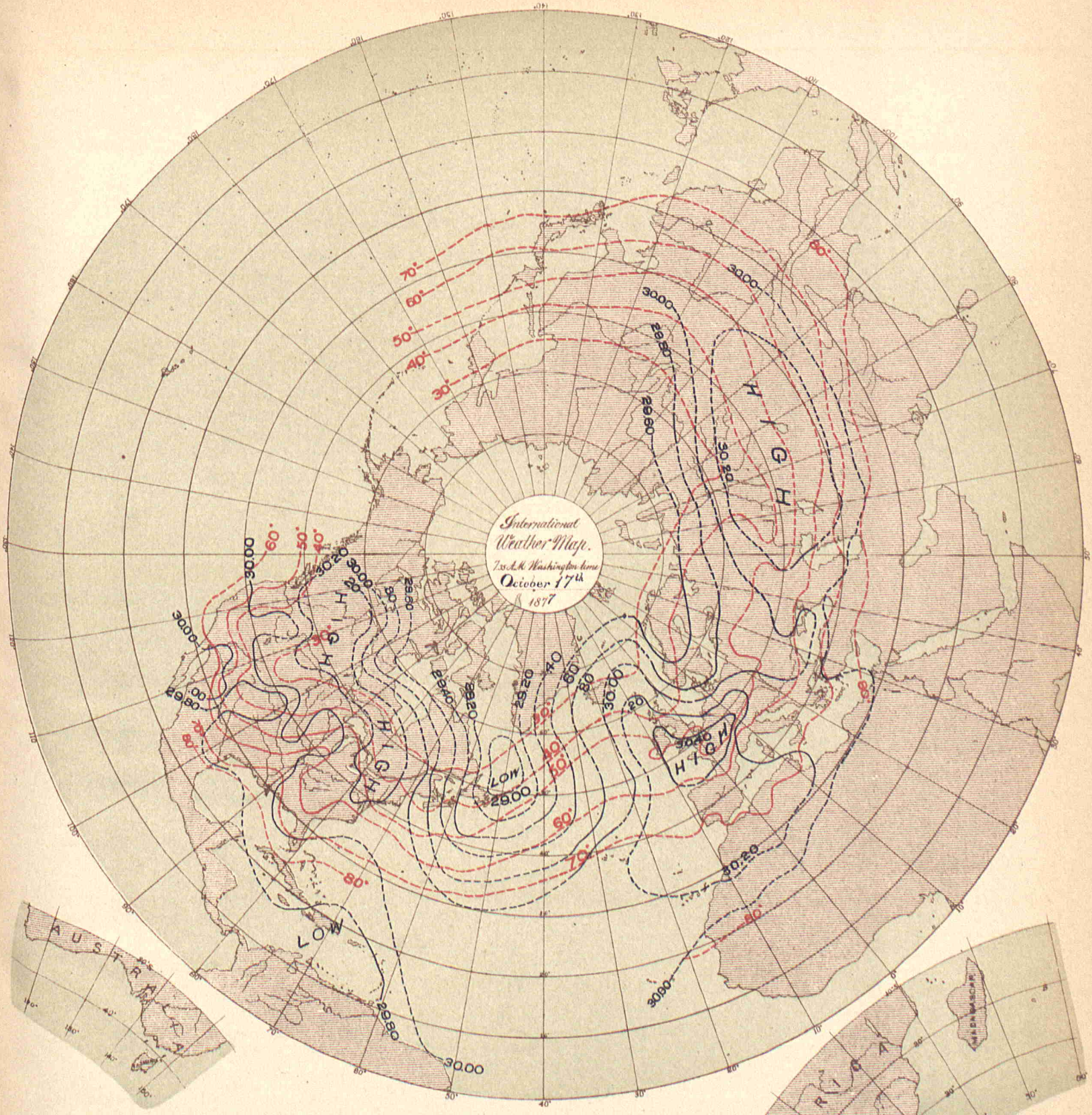
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 18, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the last 24 hours. Inches.	Rain-fall or melted snow in the last 24 hours. Millimeters.	Weather.	Observer
Nemours			30.23	767.7	71.2	21.8	59	Calm			0		0			0	0	Clear	Michel.
Algiers			30.16	766.0	68.4	20.2	71	Calm			0		0			0	0	Clear	Peter.
La Calle			30.22	767.6	71.2	21.8	69	NW			2		2			0	0	Fair	Fleury.
Tunis			30.21	767.2	71.2	21.8	45	NW			4		7			0	0	Very cloudy	Jacques.
Sfax			30.28	769.0	60.8	16.0		W			2		1			0	0	Very fair	Husson.
Saida			30.24	768.2	72.3	22.4	32	SW			3		1			0	0	Very fair	Millot.
Tebessa			30.21	767.4				NW			1		0			0	0	Clear	Bourgeois.
Geriville			30.20	767.0	66.2	19.0	54	WSW			4		2			0	0	Fair	Lemaillot.
Laghouat			30.15	765.9	69.8	21.0	57	E			2		0			0	0	Clear	François.
Biskra			30.28	769.0	74.3	23.5	44	SE			1		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the last 24 hours. Inches.	Rain-fall or melted snow in the last 24 hours. Millimeters.	Weather.	Observer
Agram	29.72	754.9	30.28	769.1	52.9	11.6	41	SE			2		3			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.39	746.5	30.18	766.6	41.4	5.2	69	WNW			4		10			0.004	0.1		Dr. Wierzbiski.
Eperies	29.25	743.0	30.15	765.8	45.9	7.7	50	NW			1		10k;s		Calm	0	0		Julius Mikolik.
Gratz	29.02	737.0	30.30	769.6	48.9	9.4	58	WNW			3		6			0	0		Andreas Rospini.
Hermannstadt	28.71	729.3	30.17	766.2	45.7	7.6	45	WNW			3		1			0	0		Prof. Reissenberger.
Kremsmünster	28.93	734.7	30.32	770.2	38.1	3.4	87	W			3		10			0	0		Prof. C. Wagner.
Lemberg	29.06	738.1	30.08	764.0	41.7	5.4	85	NW			2		5			0.028	0.7		Dr. T. Stanecki.
Pola	30.14	765.6	30.26	768.5	56.8	13.8	24	ENE			2		0			0	0		I.R. Hydrographic Office.
Szathmar	29.96	760.9	30.24	768.1	48.2	9.0	51	N			2		6			0	0		Johann Tamas, S. J.
Szegedin																			Karl Stancel.
Trieste																			P. Busin.
Vienna	30.18	766.5	30.28	769.2	55.4	13.0	63	W			1		0			0	0	Clear	I. R. Central Met. Obs'y.
	29.56	750.7	30.27	768.8	46.2	7.9	49	W			3		4			0	0		

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the last 24 hours. Inches.	Rain-fall or melted snow in the last 24 hours. Millimeters.	Weather.	Observer
Arlon	28.80	731.4	30.35	771.0	39.0	3.9	68	W			2		9			0	0		Royal Observatory.
Brussels	30.13	765.4	30.34	770.6	46.2	7.9	53	WNW			5		9		NW	0	0		
Furnes	30.35	770.8	30.37	771.4	46.2	7.9	69	WNW			4		10			0	0		
Maeseyck	30.16	766.0	30.29	769.3	47.8	8.8	68	S			2		2			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	30.08	764.0	30.18	766.6	46.4	8.0		W	14	6.3			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.22	767.6	30.23	767.8	52	11.1		SW			3		4					D. clouds	William McNeil.
Armagh, Observatory			30.26	768 6	45.3	7.4		NNW	2	0.9			10					Foggy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.30	769.6	48.1	8.9		SE	10	4.5			9					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			30.22	767.6	57.1	13.9		SSW			1		7					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.89	759.2	30.28	769.1	48.1	8.9		W			0		10			0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	85.8	29.9		E			1		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.33	770.4	50.0	10.0		W			1		1					D. clouds	H. Todd.
Cardington			30.34	770.6	49.0	9.4		NW			1		5					D. c'ouds	John McLaren.
Chatham, School M. E	30.20	767.1	30.33	770.4	52.2	11.2		W			1		2					Blue sky	Lt. Col. C. M. Martin, R. E.
Dartmoor	28.96	735.6	30.43	772.9	46.4	8.0		W			3		5					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.21	767.3	30.24	768.1	50	10.0		SW			1		7					D. clouds	J. Mac Gowan.
Dover	30.33	770.4	30.36	771.1	49	9.4		WSW			2		0					Clear	J. Costello.
Eccles, (near Manchester)			30.29	769.4	50.8	10.4		SW	2.6	1.2			7					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.08	764.0	30.31	769.9	52.5	11.4		SSE			2		4?					Overcast?	The Staff.
Fort Napier, (Natal)	27.60	701.0	29.73	755.1	103.0	39.5		E			2		5					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.88	758.9	73	22.8		Calm			0		5					Raining	
Galway, Queen's College					57	13.9		NW			6		8					Raining	S. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.17	766.3	30.21	767.3	71.5	21.9		NE			3		5					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	30.02	762.5	30.22	767.6	46.9	8.3		WNW			2		5					Gloomy	D. G. Maclean.
Great Yarmouth	30.31	769.9	30.32	770.1	46	7.8		NW			2		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.18	766.6	30.36	771.1	49.7	9.8		W			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	30.10	764.5	30.32	770.1	53.0	11.7		SE			1		0					Blue sky	Dr. S. E. Hoskins, F. R. S.
Helston			30.29	769.4	55	12.8		SE			2		2			0	0	D. clouds	M. P. Moyle.
Holyhead	30.22	767.6	30.27	768.8	49	9.4		SSW			2		10					Overcast	John Tilston.
Jersey	30.07	763.8	30.36	771.1	53.0	11.7		SE			2		2					Blue sky	J. Fisher.
Kew, Observatory			30.36	771.1	47.4	8.6		W	6	2.7			2					Hazy	The Staff.
Kingstown	30.24	768.1	30.26	768.6	52	11.1		SSE			1		10					Overcast	George Mitchell.
Leicester, Museum			30.33	770.4	49.2	9.6		W			1		7					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.04	763.0	30.11	764.8	71.0	21.7		NW			2		4					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	30.09	764.3	30.18	766.6	45	7.2		W			1		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.90	759.4	80.0	26.7		N			4		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.13	765.3	30.32	770.1	51.2	10.7		WNW			3		3c;ck		NNW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.79	756.7	30.33	770.4	47.0	8.3		W			0–1		10					Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.35	770.9	47	8.3		Calm			0		2					Blue sky	F. Lucas
Plymouth	30.24	768.1	30.32	770.1	52.2	11.2		ENE			2		10					Gloomy	John Merrifield.
Roche's Point	30.21	767.3	30.25	768.3	54	12.2		S			4		5					¾ clouded	W. Kennedy.
Saint Ann's Head	30.14	765.5	30.30	769.6	52	11.1		SSE			3		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys)			30.13	765.3	43.1	6.2		NW	15	6.7			1					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.05	763.3	66.6	19.2		NE			2		4			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	30.06	763.5	30.30	769.6	49.6	9.8		SW			2		3					Blue sky	W. F. Cooper.
Silloth Rectory	30.22	767.6	30.25	768.3	49.4	9.7	77	N			2		10			0.355	8.92	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					47.8	8.8		NW			3		10					Hazy	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			30.16	766.1	44	6.7		W			1		5					D. clouds	John Smith.
Stratfield Turgiss	30.14	765.5	30.37	771.4	51.1	10.6		Calm			0		0					Blue sky	Rev. C. H. Griffith, F. M. S.
Thurso			30.11	764.8	49	9.4		WNW			3		6					D. clouds	John Trotter.
Truro, Royal Institution			30.32	770.1	60	15.6		SE			4		3					D. clouds	W. Newcombe.
Valencia, Observatory			30.18	766.6	54.9	12.7		SE	20	8.9			10					D. clouds	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)					48	8.9		S			3		10			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.02	762.5	30.06	763.5	70.4	21.3	70	SW	11	4.9		2	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.76	755.9	52.0	11.1	77	Calm			0		0			0.10	2.5		Francis Abbott, F. R. A. S.
Leith, Restalrig Park			30.24	768.1	45.1	7.3		NW			2		10s			0.04	1.0	Overcast	Andrew Gibb.
Mauritius, Observatory	29.84	757.9	30.03	762.7	72.0	22.2	78	ESE	9.8	4.4		0	8		SE	0.14	3.6	Cloudy	C. Meldrum.
Melbourne, Observatory	29.81	757.2	29.90	759.4	52.7	11.5	86	SSE	6	2.7			7			0.48	12.2	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			30.18	766.6	50	10.0		SW			3		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			30.06	763.5	43	6.1		NNW			4	4	5	NW					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

MARINE SERIES. VESSELS.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 50° 32′, W. 23° 34′			29.94	760.5	58	14.4		WSW			2		3			10*	SW	D clouds	Capt. W. Watson.
S. S. Batavia S. 44° 10′, W. 43° 25′			29.67	753.6	58	14.4		SSW			7		7			7	SW	Showery	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 42° 15′, W. 55° 20′			29.43	747.5	52	11.1		WNW			7		8			8	Confused	Showery	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 6′			29.38	746.2	55	12.8		ESE			6		10			5	S	Raining	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 59° 0′, W. 16° 45′			30.01	762.2	57	13.9		S			5					5	SW; SSE	Rain and fog	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.18	665.0			69.8	21.0	89	SE			2	6cs	1d		NE	0.3	8.	Thunder	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.87	758.7	29.92	759.9	40.5	4.7	81	NW			4		6						
Fanöe	30.02	762.4	30.04	762.9	43.7	6.5	67	NW			4		4						
Godthaab, (Greenland)	29.82	757.3	29.86	758.4	31.6	—0.2	81	NE			2		9						
Stykkisholm, (Iceland)	29.95	760.8	30.00	761.9	37.9	3.3	97	SW			2		8						
Thorshavn, (Faröe)	30.11	764.8	30.15	765.7	36.9	2.7	53	Calm			0		0						
Vestervig	29.82	757.3	29.98	761.6	42.8	6.0	70	NW			6		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.87	758.8	30.43	772.8	55.4	13	83	E			1		2		SW	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.26	768.7	30.38	771.6	51.8	11.0	52	W			1		0			0	0	Clear.	Bonvarne, Director.
Avignon, Normal School	30.15	765.7	30.23	767.7	58.1	14.5	34	N			2		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.79	756.7	30.37	771.4	50.2	10.1	39	NE			2		2k		N	0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	30.14	765.6	30.31	769.8	52.5	11.4	43	E	5.8	2.6					W	0	0		Albert Cheux.
Beauvais	29.98	761.4	30.26	768.6	56.8	13.8	55	NE			3		5			0	0	Cloudy	Normal School.
Besançon	29.47	748.5	30.39	771.8	47.1	8.4	52	NW			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.52	749.7	30.44	773.2	44.6	7	57	NW			2	5c		NW		0	0	Cloudy	Normal School.
Bourges, Normal School	29.74	755.4	30.30	769.6	53.6	12	83	ENE			2		2		ENE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.99	761.8	30.21	767.3	51.6	10.9	56	E			3		4cs		E	0	0		The Staff.
Carcassonne, Normal School	29.77	756.2	30.19	766.7	59.9	15.5	45	NW			2		2		NW	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.29	769.3	30.36	771.2	54.0	12.2	52	W			1		2		W	0	0	Slightly cov.	Normal School.
Chartres, Normal School	29.75	755.6	30.32	770.1	55.4	13	93	SW			2		5		E	0	0		Lequin, Director.
Châlons sur-Marne, N. Sch'l	30.04	762.9	30.36	771.2	51.1	10.6	70	NW			2		5k		NW	0	0	Cloudy	T. Leloup, Director.
Clermont-F'd., Puy de D. Obs	28.95	735.2	30.34	770.7	45.7	7.6	59	NE			1		2			0	0	Slightly cl'dy	Allnard, Director.
Commercy, Normal School	29.48	748.7	30.34	770.7	45.3	7.4	69	W			2		10kn		W	0	0	Covered	Dr. Goulet, Director.
Commune de Gréasque*	29.09	738.9	30.23	767.9	64.9	18.3	41	NE			2		2		NE	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.05	763.2	30.27	768.8	52.9	11.6	32	E			4		8		E	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	30.07	763.7	30.38	771.6	51.1	10.6	84	S			2		2		S	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.41	746.9	30.35	770.8	48.0	8.9	40	NNE			4		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.21	767.3	30.31	769.8	54.0	12.2	31	E			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.65	753.1	30.36	771.1	47.5	8.6	73	NE			4		0			0	0	Clear.	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.33	744.9	30.41	772.5	44.2	6.8	65	NW			1		10		SE	0	0	Covered	Normal School
Nismes, Normal School	30.06	763.5	30.26	768.7	63.0	17.2	80	N			2		5		S	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.95	760.6	30.32	770.2	49.6	9.8	56	NE			2		2		E	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	30.13	765.4	30.38	771.7	49.1	9.5	52	NE			1		9k		NW	0	0	Foggy	National Observatory.
Privas	29.23	742.4	30.31	769.8	55.8	13.2	45	NW			2		2		SE	0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.22	767.5	30.25	768.3	54.5	12.5	52	E			4		10		NE	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.27	768.9	30.36	771.1	51.4	10.8	63	E			1		5		S	0	0	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.08	738.6	30.17	766.2	62.6	17	53	E			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.62	752.4	30.35	770.9	51.3	10.7	62	E			3		5		Calm	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.75	755.6	29.78	756.3	81.0	27.2										1.18	30.		L'Abbé Marchési.
Marseilles, Observatory			30.17	766.4	66.0	18.9	47	SW			1–2		6			0	0		The Staff.
Mont-Louis	25.02	635.4	30.33	770.4	49.8	9.9	49	SSE	7.4	3.33			8		WSW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.09	764.2	30.36	771.2	50.0	10.0	46	NNE			2		8		NW	0	0		Marié Davy, Director.
Perpignan			30.22	767.6	57.6	14.2	25	SE	9.3	4.17			5		NW	0	0		Dr. Flues.
Pic du Midi, (Summit,) H. P.	21.39	543.4			40.1	4.5		SW			2		8					Cloudy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.66	575.5			47.1	8.4		SW			2		8			0	0	Cloudy	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.21	767.4	30.38	771.6	50.7	10.4	51	E			1		5k		NNW	0	0		E. Renou.
Toulouse, Observatory	29.49	749.1	30.22	767.6	59.4	15.2	30	NNE			1		9			0	0		The Staff.
Tours	30.11	764.7	30.30	769.7	52.3	11.3		WNW			3		3		WNW	0.102	2.6		C. Marquet.
Versailles, (near Paris)			30.37	771.3	52.5	11.4	45	NNW			1		8			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.99	761.8	30.02	762.4	61.2	16.2	99	SSE	1.6	0.7		4ck		WSW		0	0	Fair	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 358 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.95	760.7	30.12	765.0	46.0	7.8	62	S			2		6			0.042	1.07		Prof. Arndt.
Breslau	29.63	752.5	30.16	766.1	41.0	5.0	73	W			5		9			0	0		Royal University Obs'y.
Carlsruhe	29.90	759.4	30.34	770.7	46.0	7.8	63	SW			2		9			0	0		Albert Senz.
Cassel	29.69	754.0	30.14	765.5	43.2	6.2	67	WSW			5		6	WSW		0.165	4.18		Dr. H. Möhl.
Crefeld	30.11	764.7	30.27	768.9	48.2	9.0	51	W			4		5k			0	0		Director Lose.
Emden	30.21	767.2	30.24	768.1	42.1	5.6	87	WNW			2		5			0.425	10.8		Prof. Prestel.
Frankfort on the Main	30.00	761.9	30.37	771.5	47.8	8.8	32	WNW			2		5			0.035	0.9		Physical Society.
Friedrichshafen	28.90	734.0	30.38	771.6	44.6	7.0	70	SSW					1	W		0	0		M. Wilhelm.
Hamburg	30.07	763.8	30.14	765.6	39.2	4.0	95	WSW			4		8ks			0.551	14.0	Rain-squalls	Captain F. Hegemann.
Kiel	30.05	763.3	30.07	763.7	43.9	6.6	70	W			3		5			0.074	1.87		Prof. G. Karsten.
Königsberg, (Prussia)	29.73	755.1	29.81	757.2	41.2	5.1	71	W										Cloudy	Prof. E. Luther.
Köslin			29.88	759.0	37.6	3.1		W			4		5			0.862	21.9	Graupelnd.	H. Müller.
Leipsic, Observatory	29.82	757.3	30.25	768.3	44.2	6.8	64	W			4		6	W		0.035	0.9		Prof. Bruhns.
Memel, Naval School	29.74	755.5	29.79	756.7	44.2	6.8	60	W			5		9ks;n						Reinbrechtvon Skalweit.
Neufahrwasser	29.84	757.8	29.85	758.2	42.6	5.9	74	WNW			4		8			0	0		A. Lothes.
Posen	29.89	759.2	30.19	766.8	42.4	5.8	70	W			3–4		10			0.118	3.0	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.81	757.1	30.37	771.5	47.1	8.4	57	N			2		7	W		0.011	0.27		Dr. Schur.
Stuttgart	29.35	745.6	30.32	770.2	45.5	7.5	42	NW			1		4	W		0	0		Prof. Schoder.
Treves, (Trier)	29.71	754.5	30.23	767.9	46.9	8.3	60	W			5		9			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.77	730.7	30.32	770.1	43.2	6.2	38	W			2		7kn		W	Inap.	Inap.	Light snow.	Dr. Von Bebber.
Wustrow, Naval School	30.02	762.5	30.06	763.5	44.4	6.9	53	NW			6		8					Cloudy	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.68	753.9	30.07	763.6	71.6	22.0		SW					k					Clear	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.85	758.3	29.90	759.6	80.0	26.7	40	WSW	18.0?	8.0?			0			0	0	Blue sky	
Deesa	29.44	747.7	29.91	759.7	86.0	30.0	34	S					0			0	0	Blue sky	
Bombay	29.86	758.4	29.90	759.3	82.9	28.3	80	W	4.0	1.8			9	S		0.23	5.8	D. clouds	
Poona	27.86	707.6	29.86	758.5	77.9	25.5	81	SE					10		S	0.39	9.9	Raining	
Lahore	29.14	740.2	29.89	759.2	77.9	25.5	52	N	1.4	0.6			4			0.06	1.5	Cloudy	
Belgaum	27.38	695.5	29.96	760.8	70.7	21.5	86	WSW	6.0	2.7			8		WSW	0	0	Threatening	
Bangalore																			
Roorkee	28.95	735.4	29.84	758.0	84.8	29.3	47	S	2.3	1.0						0	0		
Agra	29.27	743.5	29.83	757.7	87.8	31.0	52	W								0	0		
Trichinopoly																			
Nagpur	28.85	732.8	29.89	759.1	84.3	29.1	58	Calm	2.4	1.1			5			0	0	D. clouds	
Madras																			
Lucknow	29.49	749.0	29.86	758.4	83.3	28.5	63	Calm	0.7	0.3			1			0	0	Blue sky	
Allahabad	29.55	750.6	29.86	758.5	81.7	27.6	67	Calm	0.8	0.4			1			0	0	D. clouds	
Patna	29.08	753.8	29.85	758.3	89.4	31.9	44	Calm	0.6	0.3			2			0	0		
Hazaribagh	27.88	708.2	29.90	759.5	76.6	24.8	66	W	5.1	2.3			0			0	0	Blue sky	
Cuttack	29.82	757.3	29.90	759.4	83.0	28.3	78	Calm	0.6	0.3						0	0	Foggy	
Calcutta (Alipore)	29.87	758.7	29.89	759.2	80.0	26.7	82	WNW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.47	748.6	29.86	758.5	79.8	26.6	68	Calm	0.5	0.2			0			0	0	Blue sky	
Chittagong																			
Sibsagar	29.55	750.6	29.89	759.1	79.1	26.2	82	WSW	0.7	0.3			7			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.54	725.0	29.90	759.5	83.0	28.3	64	NE	2.5	1.1			5	W		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.21	564.1	30.14	765.6	27.3	— 2.6	60	NW			2		1	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.21	564.1	30.19	766.8	25.9	— 3.4		W			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.85	758.2	30.27	768.8	53.4	11.9	26	W	0.7	0.3			0			0.031	0.8		Prof. Giovanni Clodig.
Padua	30.14	765.6	30.25	768.4	55.8	13.2	25	NE	6.9	3.1			1			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.05	763.2	30.25	768.3	56.1	13.4	33	SE	3.8	1.7			2	W		0	0		Conte Alm. Da Schio.
Verona	30.00	762.0	30.29	767.7	59.9	15.5	65	SE	9.8	4.4			4			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.19	741.3	30.23	767.8	56.3	13.5	49	SW			4		0			0	0		Prof. Giuseppe Calza
Milan	29.74	755.5	30.28	769.0	57.7	14.3	50	ESE			4		0			0	0		Ab. Gio. Capelli.
Pavia	29.91	759.7	30.26	768.6	53.8	12.1	60	NE			1		2	NW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.34	745.1	30.26	768.6	54.5	12.5	54	WNW	0	0			1			0	0		Prof. P. F. Denza.
Mondovi	28.31	719.1	30.25	768.3	50.2	10.1	44	NW			4		1	S		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.98	761.5	30.21	767.2	61.7	16.5	38	E			8		6			0	0		Prof. L. Vassallo.
Genoa	30.04	762.9	30.21	767.2	62.4	16.9	38	N	4.9	2.2			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.00	762.0	30.26	768.6	55.6	13.1	47	E	2.5	1.1			3	E		0	0		Dott. G Manzi.
Parma	29.91	759.8	30.25	768.3	59.2	15.1	36	SE			4		1			0	0		Prof. P. Pigorini.
Florence	29.97	761.2	30.23	767.8	61.3	16.3	39	NE			2		2			0.016	0.4		Cav. F Meucci.
Leghorn	30.11	764.7	30.19	766.9	63.3	17.4	43	ENE	8.0	3.6			3			0	0		Prof. P. Monte.
Siena	28.97	735.9	30.19	766.9	59.9	15.5	38	E	1.8	0.8			4	W		0	0		Prof. L. Toscani.
Urbino	28.70	728.9	30.25	769.0	50.0	10.0	65	NNE			6		9			0.197	5.0		Prof. P. Serpieri.
Pesaro	30.21	767.3	30.26	768.6	57.6	14.2	47	E	26.2	11.7			10	E		0	0		Prof. Luigi Guidi.
Ancona	30.15	765.9	30.26	768.7	57.6	14.2	51	SE			4		6			0	0		Prof. F. DeBosis.
Grosseto	30.10	764.4	30.21	767.3	65.8	18.8	45	NW			2		4	SE		0	0		Avv. P. Ponticelli.
Rome	29.98	761.5	30.16	766.0	66.7	19.3	52	NNW	0	0			6			0	0		Prof. P. A Secchi.
Naples, O. U.	29.97	761.1	30.17	766.2	68.7	20.4	42	NE			2		1	E		0	0		Prof. L. Palmieri.
Lecce					63.5	17.5	69	NNW	11.9	5.3			6			0	0		Prof. C. De Giorgi.
Cosenza	29.33	744.9	30.22	767.6	61.3	16.3	79	SE	0	0			10			0.118	3.0		Prof. F. D. Conti.
Cagliari	29.93	760.3	30.12	765.1	66.9	19.4	33	N			4		3	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.08	764.0	30.13	765.2	68.7	20.4	59	E			2		8	SE		0.354	9.0		Prof. F. Cafiero.
Palermo	29.85	758.2	30.10	764.6	67.3	19.6	59	W	6.3	2.8			6			0	0		Prof. G. Cacciatore.
Caltanissetta	28.17	715.5	30.11	764.8	63.7	17.6	55	NW			2		5			0	0		Prof. A. Pagani.
Syracuse	30.00	761.9	30.07	763.8	70.2	21.2	59	NE			1		9	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.63	752.5	30.18	766.6	65.1	18.4	52	NE	1.8	0.8			4			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.5 ft.; Urbino, 461 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.02	762.5	30.12	765.0	61.2	16.2	93	N	2	0.9			10s			0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.09	586.5	30.12	765.1	57.2	14.0	80	Calm	0	0		5c	0	NW		0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzales.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,233 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosi, 1,593 m. or 5,210.4 ft.; Zacatecas, 2,495 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.35	770.9	30.35	770.9	46.8	8.2		NW			4					0.024	0.6		
Groningen	30.15	765.8	30.21	767.2	42.1	5.6		NW			2					0.256	6.5		
Helder	30.24	768.1	30.24	768.1	45.3	7.4		W			4					0.031	0.8		
Hellevoetsluis			30.30	769.6	46.4	8.0	64	WNW			4								
Utrecht	30.24	768.0	30.28	769.2	47.1	8.4	64	W			3		5			0.224	5.7	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.93	760.2	29.98	761.6	35.2	1.8	96	SSE	6.5	2.9			8			0.020	0.5		
Brōno	29.74	755.5	29.78	756.5	33.4	0 8	85	SW	7	3			8					Light snow	
Christiania	29.71	754.6	29.86	758.4	41.5	5.3	29	WNW	7	3			0			0	0		
Tromsö	29.70	754.4	29.74	755.5	31.1	—0.5	90	SSW	4	2			5			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.02	762.4	30.21	767.2	68.4	20.2	94	W	2.5	1.1			7			0.079	2.0		Dr. J. A. Sampaio
Campo Major	29.20	741.7	30.20	767.0	75.2	24.0	55	ESE	2.5	1.1			6	ESE		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.21	767.2	30.28	769.0	73.6	23.1	66	SW	7.4	3.3			2			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.89	759.1	30.24	768.1	70.3	21.3	52	SW	12.5	5.6			7	SW		0	0		The Staff.
Ponta Delgada, (Azores)	30.13	765.2	30.20	767.0	69.8	21.0	96	S	5.6	2.5			10			0.138	3.5		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.56	750.8	29.99	761.8	41.2	5.1	73	WSW	20	9			9					Raining	Astronomical Obs.
Wilna	29.46	748.2	29.89	759.1	38.5	3.6	85	SW	4	2			10						Astronomical Obs.
Dorpat	29.49	749.0	29.74	755.3	39.6	4.2	77	SW	13	6			6						Prof. Dr. Weihrauch
St. Petersburg	29.70	754.3	29.71	754.7	43.3	6.3	87	SE	13	6			10						Central Physical Obs.
Kuopio	29.34	745.3	29.67	753.6	41.5	5.3	91	E	13	6			10						Ch. Forsten.
Kieff	29.30	744.2	29.96	760.9	40.1	4.5	82	NW	9	4			10						Physical Cabinet
Nikolaiev	29.96	761.0	30.03	762.8	47.1	8.4	89	N	18	8			10						Kurdakof.
Kertch	30.03	762.8	30.05	763.3	54.7	12.6	96	Calm	0	0			10					Raining	Lagorio.
Moscow	29.33	744 9	29.88	759.0	46.0	7.8	78	S	7	3			10						Meteorological Obs.
Lugan	29.70	754.4	29.91	759.6	51.6	10.9	92	SSW	4	2			10			Blank	Blank		Meteorological Obs.
Archangel	29.83	757.7	29.85	758.2	43.7	6.5	98	Calm	0	0			10						Ogorodnikof.
Tiflis	28.65	728.4	30.08	764.0	64.6	18.1	76	Calm	0	0			7						Physical Observatory.
Astrakhan	30.02	762.6	29.94	760.5	59.9	15.5	90	SSE	4	2			10			Blank	Blank		Sebastianof.
Kasan	29.85	758.3	30.13	765.4	45.7	7.6	90	Calm	0	0			10						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	29.34	745.2	30.30	769.6	48.2	9.0	72	WSW	2	1			4						Meteorological Obs.
Nuknus	29.91	759.8	30.14	765.6	66.0	18.9	45	NNE	4	2			0						
Kasaly																			Bobrof.
Tashkend	28.54	724.9	30.26	768.6	53.6	12 0	89	Calm	0	0			0						Michelson.
Barnaul	29.81	757.1	30.34	770.5	49.8	9.9	50	SW	18	8			10						Meteorological Obs.
Yeniseisk	29.69	754.2	29.84	757.9	33.3	0.7	94	W	2	1			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.78	756.3	29.92	759.9	47.3	8.5	96	Calm	0	0			3						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					37.4	3.0	95	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.: Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.98	710.6	30.17	766.4	66.7	19.3	47	S	3.7	1.67		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.84	757.9	29.92	760.0	75.0	23.9	86	Calm	0	0		0	2k			Inap.	Inap.	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.14	765.5	30.23	767.9	72.9	22.7	61	SW	7.7	3.4		4	5	W	W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.79	756.7	81.3	27.4	89	SW	3.1	1.37		2s	1k			0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published: wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.72	755.0	29.76	756.0	38.1	3.4	.....	S	.....	.....	2	.....	2	.....	.....	0	0	.....	
Umea	29.62	752.4	29.67	753.7	38.1	3.4	80	Calm	.....	.....	0	.....	7	.....	.....	0	0	.....	
Hernosand	29.65	753.0	29.70	754.3	34.5	1.4	74	NW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Stockholm	29.51	749.5	29.69	754.0	35.6	2.0	91	W	.....	.....	2	.....	7	.....	.....	0	0	.....	
Wisby	29.66	753.4	29.72	754.9	39.9	4.4	68	NW	.....	.....	6	.....	3	.....	.....	0.146	3.7	.....	
Sub-Series.																			
Upsala	29.63	752.5	29.70	754.4	36.5	2.5	71	NW	13.9	6.2	.....	.....	8	.....	N	0.004	0.09	.....	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.88	733.6	30.33	770.4	46.8	8.2	38	N	.....	.....	1	.....	1	.....	.....	0	0	.....	The Observatory.
Zurich	28.70	728.9	30.40	772.2	45.7	7.6	43	W	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, +7.5 mm; Thermometer, —4.2 cent.; Relative Humidity, —34 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.11	764.8	62.6	17.0	65	N	7	3.0	.....	.....	5	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.14	765.6	59.4	15.2	.....	NE	.....	.....	6	.....	5	.....	.....	Blank	Blank	.....	B. Stefanidès.
Valona	.....	.....	30.17	766.2	63.7	17.6	.....	NW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.85	758.2	29.97	761.2	77.9	25.5	60·	N	.....	.....	3	.....	3ck;s	SW	NE	0	0	D. clouds	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.10	764.5	41	5.0	.....	Calm	0	0	.....	.....	10s	.....	W	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.78	756.4	40	4.4	73	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.71	754.6	46	7.8	74	NW	15	6.7	.....	.....	10s	.....	Calm	0.060	1.52	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.89	759.2	30.09	764.3	36.0	2.2	97	N	.....	.....	1	2ck	8s	W	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.93	760.2	29.96	761.0	.....	.....	.....	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C.	30.00	762.0	30.05	763.3	46.8	8.2	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.00	762.0	38	3.3	79	NW	9	4.0	.....	0	0	.....	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B.	29.84	757.9	29.90	759.4	39.1	3.9	63	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.21	767.3	31	— 0.6	95	N	6	2.7	.....	0	2ks	.....	N	0	0	Fair	James Stewart.
Goderich, Ontario	29.18	741.2	29.98	761.5	52.4	11.3	95	SE	.....	.....	1	.....	10n	.....	.....	0.038	0.97	Threatening	H. J. Strang, M. A
Granton, Ontario	28.88	733.5	29.98	761.5	49	9.4	100	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S.	29.59	751.6	29.73	755.1	41	5.0	70	NW	15	6.7	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.64	752.8	30.02	762.5	52.5	11.4	94	E	.....	.....	2	10cs	0	.....	.....	0.20	5.1	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	28.97	735.8	28.99	736.3	40	4.4	91	NE	.....	.....	5	.....	10n	.....	.....	0.14	3.6	Raining	E. Weedon.
*Kingston, Ontario	29.77	756.1	30.14	765.5	46	7.8	74	NE	3	1.3	.....	10c	0	Calm	.....	Inap.	Inap.	Cloudy	S. Woods, M. A
*Montreal, Quebec	29.91	759.7	30.12	765.0	41	5.0	65	E	3	1.3	.....	5c	2ks	.....	.....	0	0	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.34	745.2	30.05	763.3	42	5.6	96	E	7	3.1	.....	.....	10n	.....	E	0.15	3.8	Light rain	Rev. R. Mosley
Peterboro, Ontario	29.30	744.2	30.06	763.5	46.7	8.2	84	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.29	744.0	29.99	761.7	50	10.0	93	NE	5	2.2	.....	.....	10n	.....	SW	Inap.	Inap.	Threatening	H. Morgan.
Port Hastings, N. S.	29.57	751.1	29.62	752.3	45.4	7.4	.....	NW	15	6.7	.....	.....	.....	.....	.....	0.40	10.2	Fine	Peter Grant.
Port Stanley, Ontario	29.34	745.2	29.99	761.7	52	11.1	90	NE	1	0.4	.....	.....	10n	.....	NW	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.74	755.4	30.07	763.8	43	6.1	75	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.95	753.1	30.12	765.0	41	5.0	96	Calm	0	0	.....	.....	10s	.....	W	Inap.	Inap.	Light rain	W. H. McIntyre.
St. John, N. B.	29.71	754.6	29.88	758.9	39	3.9	68	NW	14	6.3	.....	0	0	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.25	742.9	29.95	760.7	49	9.4	93	SE	2	0.9	.....	.....	10ks	.....	S	0.68	17.3	Light rain	K. Stewart.
Stayner, Ontario	.....	.....	30.05	763.3	46	7.8	96	SE	5	2.2	.....	.....	10n	.....	SE	0.37	9.4	Light rain	R. J. Cole.
Stratford, Ontario	28.70	729.0	29.99	761.7	48.3	9.1	98	E	4	1.5	.....	.....	10s	.....	.....	0.019	0.48	Light rain	C. J. MacGregor, M. A.
*Sydney, C. B.	29.50	749.3	29.53	750.0	46	7.8	74	NW	11	4.9	.....	.....	8ks	.....	NW	0.03	0.8	Cloudy	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.02	762.5	50	10.0	92	E	5	2.2	.....	.....	10n	.....	E	0.28	7.1	Light rain	Magnetic Observatory.
Windsor, N. S.	29.70	754.4	29.79	756.7	42.6	5.6	66	W	14	6.3	.....	1k	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	40.5	4.7	96	W	.....	.....	.....	.....	10n	.....	.....	0.05	1.3	Raining	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.87	758.7	30.10	764.5	44	6.7	84	N	3	1.3		2ck	2ks	Calm	N	Inap.	Inap.	Fair	
Alpena, Michigan	29.32	744.7	29.97	761.2	50	10.0	100	NE	4	1.8			Fog		Calm	1.19	30.2	Light rain	
Atlantic City, New Jersey	30.09	764.3	30.11	764.8	52	11.1	100	Calm	0	0		1c	0	NW		0	0	Clear	
Augusta, Georgia																0	0		
Baltimore, Maryland	30.06	763.5	30.11	764.8	57	13.9	81	SE	1	0.4		8k	Fog	SW	Calm	0	0	Cloudy	
Barnegat, New Jersey	30.08	764.0	30.10	764.5	57	13.9	81	NW	7	3.1		2c	0	NW		0	0	Clear	
Bismarck, Dakota	28.40	721.3	30.13	765.3	36	2.2	90	W	3	1.3		8cs	0	Calm		Inap.	Inap.	Cloudy	
Boise City, Idaho	27.33	694.2	30.00	762.0	41	5.0	82	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.98	761.5	30.14	765.5	43	6.1	50	W	5	2.2		1cs	0	N		0	0	Clear	
Brackettville, Texas	28.74	730.0	29.75	755.6	61	16.1	82	NW	4	1.8		10k	0	W		0	0	Cloudy	
Breckenridge, Minnesota	29.14	740.1	30.16	766.1	39	3.9	91	Calm	0	0			10s		Calm	0	0	Cloudy	
Brownsville, Texas	29.77	756.1	29.83	757.7	71	21.7	95	N	4	1.8			10s		N	0.80	20.3	Cloudy	
Buffalo, New York	29.24	742.7	29.94	760.5	55	12.8	87	NE	3	1.3			10s		W	0.01	0.3	Cloudy	
Burlington, Vermont	29.86	758.4	30.12	765.0	46	7.8	41	Calm	0	0		8c	0	Calm		0	0	Fair	
Cairo, Illinois	29.50	749.3	29.88	758.9	67	19.4	84	SE	7	3.1			10s		Calm	0.25	6.3	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.86	682.2	30.35	770.9	41	5.0	82	W				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.01	763.0	30.05	763.3	65	18.3	83	NE	8	3.6		2cs	0	SW		0	0	Fair	
Cape Henry, Virginia	30.08	764.0	30.10	764.5	60	15.6	76	E	4	1.8		5cs	0	NE		0	0	Fair	
Cape Lookout, N. Carolina	30.09	764.3	30.10	764.5	69	20.6	79	NE	12	5.4		5c	0	W		0	0	Fair	
Cape May, New Jersey	30.09	764.3	30.12	765.0	60	15.6	88	SW	10	4.5		5cs	0	NW		0	0	Fair	
Charleston, South Carolina	30.04	763.0	30.11	764.8	65	18.3	100	NE	5	2.2			Fog		Calm	0	0	Foggy	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	28	— 2.2	100	NE	16	7.2			10n		Calm	0.01	0.3	Heavy snow	
Chicago, Illinois	29.25	742.9	29.92	760.0	57	13.9	94	NE	8	3.6			Fog		Calm	0.17	4.3	Foggy	
Cincinnati, Ohio	29.28	743.7	29.91	759.7	60	15.6	82	SE	2	0.9		5cs	Fog	W	SE	0	0	Fair	
Cleveland, Ohio	29.30	744.2	30.00	762.0	63	17.2	94	S	6	2.7			10s		SW	0.10	2.5	Cloudy	
Concho, Texas					52	11.1	86	NE	6	2.7		8cs	0	NE		0.10	2.5	Cloudy	
Corsicana, Texas	29.42	747.3	29.89	759.2	57	13.9	100	NW	7	3.1			10s		NW	0.59	15.0	Cloudy	
Davenport, Iowa	29.34	745.2	29.97	761.2	55	12.8	93	NE	3	1.3			10s		Calm	0	0	Cloudy	
Denison, Texas	29.11	739.4	29.90	759.4	55	12.8	100	NW	5	2.2			10s		NW	0.12	3.0	Cloudy	
Denver, Colorado	24.86	631.4	30.08	764.0	37	2.8	63	NW	8	3.6			10s		Calm	0.05	1.3	Cloudy	
Detroit, Michigan	29.26	743.2	29.91	759.7	59	15.0	94	SW	4	1.8			10s		Calm	0.01	0.3	Cloudy	
Dodge City, Kansas	27.38	695.4	29.66	753.4	47	8.3	92	E	4	1.8			10s		NE	0.48	12.2	Cloudy	
Dubuque, Iowa	29.28	743.7	29.97	761.2	53	11.7	93	NW	1	0.4			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.39	746.5	30.08	764.0	47	8.3	92	Calm	0	0			10s		Calm	0.01	0.3	Cloudy	
Eagle Pass, Texas	29.13	739.9	29.85	758.2	64	17.8	78	NW	8	3.6		2ck	5s	SW	Calm	0.01	0.3	Fair	
Eastport, Maine	29.81	757.2	29.88	758.9	42	5.6	49	NW	21	9.4		0	0			0	0	Clear	
Erie, Pennsylvania	29.24	742.7	29.94	760.5	61	16.1	94	S	9	4.0			10n			0.02	0.5	Light rain	
Escanaba, Michigan	29.36	745.7	30.01	762.2	52	11.1	93	N	4	1.8			10s		N	0.58	14.7	Cloudy	
Florence, Arizona	28.44	722.4	30.04	763.0	60	15.6	44	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.04	610.6	30.04	763.0	35	1.7	80	NE	8	3.6		0	0			0.06	1.5	Clear	
Fort Craig, New Mexico																0.38	9.7		
Fort Gibson, Indian Ter	29.30	744.2	29.83	757.7	55	12.8	93	N	6	2.7			10s		N	0.18	4.6	Cloudy	
Fort Griffin, Texas	28.68	728.5	29.95	760.7	54	12.2	93	NW	2	0.9			10ks		Calm	0.36	9.1	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.70	729.0	29.80	756.9	50	10.0	93	NW	2	0.9			10s		NW	0.23	5.8	Cloudy	
Fort Sully, Dakota	28.53	724.6	30.27	768.8	32	0.0	89	Calm	0	0			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.75	755.6	29.79	756.7	71	21.7	95	NW	10	4.5			10s;ks		SW; NW	0.95	24.1	Threatening	
Grand Haven, Michigan	29.30	744.2	29.94	760.5	54	12.2	93	NE	6	2.7			10s		NE	0.90	22.9	Cloudy	
Indianapolis, Indiana	29.15	740.4	29.90	759.4	65	18.3	89	E	2	0.9			10s		Calm	0.07	1.8	Cloudy	
Indianola, Texas	29.78	756.4	29.81	757.2	65	18.3	100	N	18	8.0			10n		E	1.48	37.6	Light rain	
Jacksboro, Texas																			
Jacksonville, Florida	30.02	762.5	30.04	763.0	69	20.6	84	E	5	2.2		0	0			Inap.	Inap.	Clear	
Keokuk, Iowa	29.30	744.2	29.90	759.4	53	11.7	93	N	6	2.7			10s		Calm	0.02	0.5	Cloudy	
Key West, Florida	29.89	759.2	29.92	760.0	78.0	25.6	77	NE	12	5.4		1cs	1ks	Calm	Calm	0	0	Hazy	
Kittyhawk, North Carolina	30.11	764.8	30.14	765.5	63	17.2	83	E	2	0.9		2cs	2s	NE	NE	0	0	Fair	
Knoxville, Tennessee	29.06	738.1	30.07	763.8	54	12.2	93	N	4	1.8		9ck	0	S		0	0	Cloudy	
La Crosse, Wisconsin	29.23	742.4	29.96	761.0	51	10.6	100	N	7	3.1			10n		N	0.09	2.3	Light rain	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	39	3.9	73	Calm	0	0		0	0			0.05	1.3	Clear	
Laredo, Texas					67	19.4	90	N	4	1.8			10s		N	0.10	2.5	Cloudy	
Leavenworth, Kansas	29.08	738.6	29.93	760.0	47	8.3	96	N	6	2.7			10n		Calm	0.08	2.0	Light rain	
Los Angeles, California	29.72	754.9	30.06	763.5	55	12.8	68	Calm	0	0		0	0			0	0	Clear	
Louisville, Kentucky	29.39	746.5	29.93	760.2	65	18.3	78	SE	6	2.7		5c	2s; sm	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.41	747.0	30.08	764.0	61	16.1	77	NE	2	0.9		0	Sm'e		SE	0	0	Smoky	
Maricopa Wells, Arizona					47	8.3	21	N				0	0			0	0	Clear	
Marquette, Michigan	29.30	744.2	30.00	762.0	50	10.0	78	NW	4	1.8			Fog		Calm	1.40	35.6	Foggy	
Mason, Texas	28.29	718.6	30.04	763.0	55	12.8	93	N	4	1.8			10n		S	0.02	0.5	Rainy	
Memphis, Tennessee	29.57	751.1	29.87	758.7	70	21.1	95	SE	3	1.3			10n		SE	0.24	6.1	Light rain	
Milwaukee, Wisconsin	29.30	744.2	29.98	761.5	52	11.1	93	NE	8	3.6			10s			0.34	8.6	Cloudy	
Mobile, Alabama	29.93	760.2	29.97	761.2	72	22.2	90	SE	7	3.1			10s		S	0	0	Cloudy	
Montgomery, Alabama	29.81	757.2	30.04	763.0	67	19.4	79	SE	3	1.3		5cs	Haze	Calm	Calm	0	0	Fair	
Morgantown, West Virginia	28.99	736.3	30.03	762.7	57	13.9	81	Calm	0	0		1c	Haze	NW		0	0	Fair	
Mt. Washington, N. H.	23.78	604.0	30.14	765.5	32	0.0	89	N	30	13.4		2ck	0	N		0	0	Clear	
Nashville, Tennessee	29.44	747.8	29.96	761.0	64	17.8	78	E	1	0.4			10s		S	0	0	Cloudy	
New Haven, Connecticut	29.95	760.7	30.07	763.8	53	11.7	54	N	5	2.2		5c	Haze	W		0	0	Fair	
New London, Connecticut	30.04	763.0	30.09	764.3	51	10.6	65	Calm	0	0		1cs	Sm'e	Calm	Calm	0	0	Clear	
New Orleans, Louisiana	29.83	757.7	29.89	759.2	75	23.9	90	S	12	5.4		5ck	4s	W	S	0.01	0.3	Cloudy	
Newport, Rhode Island	30.02	762.5	30.07	763.8	50	10.0	53	NW	5	2.2		1c	0	NW		0	0	Clear	
New York, New York	29.92	760.0	30.10	764.5	55	12.8	68	NW	2	0.9		5ck	2ks; fg	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.07	763.8	30.13	765.3	60	15.6	94	Calm	0	0			10ks		NW	0	0	Cloudy	
North Platte, Nebraska	27.16	689.8	29.83	757.7	32	0.0	84	N	8	3.6			10s		Calm	0	0	Cloudy	
Olympia, Washington Ter.	30.00	762.0	30.04	763.0	45	7.2	100	Calm	0	0			Fog		Calm	0	0	Dense fog	
Omaha, Nebraska	28.90	734.0	29.98	761.5	47	8.3	92	NW	7	3.1			10s		NW	0.14	3.6	Cloudy	
Oswego, New York	29.74	755.4	30.06	763.5	51	10.6	72	SE	6	2.7			10s		Calm	0.02	0.5	Cloudy	
Pembina, Dakota	29.35	745.5	30.22	767.6	28.5	— 1.9	83	NW	5	2.2		0	0			0	0	Clear	
Philadelphia, Pennsylvania	30.06	763.5	30.12	765.0	57	13.9	81	W	5	2.2		5cs	Fog	Calm	Calm	0	0	Fair	
Phœnix, Arizona					49	9.4	63	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.66	448.6	29.87	758.7	4	—15.6	100	NE	22	9.8			10n		Calm	0.59	15.0	Light snow	
Pioche, Nevada	24.18	614.2	29.95	760.7	40	4.4	31	NW	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.20	741.7	30.00	762.0	54	12.2	93	Calm	0	0			Fog			0	0	Foggy	
Port Huron, Michigan	29.26	743.2	29.91	759.7	57	13.9	93	S	4	1.8			10s			0	0	Cloudy	
Portland, Maine	29.98	761.5	30.03	762.7	42	5.6	65	W	8	3.6		2c	Haze	NW		0	0	Fair	
Portland, Oregon	30.00	762.0	30.09	764.3	49	9.4	85	Calm	0	0		0	0			0	0	Clear	
Prescott, Arizona	24.76	628.9	30.12	765.0	37	2.8	45	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	73	22.8	76	NE	12	5.4		0	0			0	0	Clear	
Red Bluff, California	29.75	755.6	30.11	764.8	52	11.1	35	Calm	0	0		0	0			0	0	Clear	
Rochester, New York	29.36	745.7	29.98	761.5	49	9.4	93	SE	6	2.7			10s; fg		W; Calm	0.01	0.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.54	750.3	30.12	765.0	45	7.2	100	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	30.00	762.0	30.08	764.0	51	10.6	65	S	2	0.9		0	0			0	0	Clear	
St. Louis, Missouri	29.31	744.5	29.87	758.7	57	13.9	87	NW	10	4.5			10s		Calm	0.84	21.3	Cloudy	
St. Marks, Florida	30.02	762.5	30.03	762.7	67	19.4	94	E	4	1.8		0	0			0	0	Clear	
St. Paul, Minnesota	29.17	740.9	30.00	762.0	47	8.3	92	N	6	2.7			10s		Calm	0.02	0.5	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.77	654.6	30.10	764.5	42	5.6	58	E	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.18	741.2	29.76	755.9	60	15.6	94	N	4	1.8		0	5ks		Calm	1.93	49.0	Fair	
San Diego, California	30.01	762.2	30.08	764.0	58	14.4	87	NW	2	0.9		0	0			0	0	Clear	
Sandusky, Ohio	29.30	744.2	29.95	760.7	62	16.7	88	SW	5	2.2		7cs	Fog	SW	Calm	0.01	0.3	Fair	
Sandy Hook, New Jersey	30.07	763.8	30.10	764.5	56	13.3	62	N	4	1.8		5ck	Sm'e	NW		0	0	Cloudy	
San Francisco, California	30.07	763.8	30.13	765.3	50	10.0	93	W	4	1.8		0	5s		W	0	0	Fair	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	34	1.1	100	N	1	0.4			10s		Calm	0.13	3.3	Threatening	
Savannah, Georgia	29.99	761.7	30.09	764.3	63	17.2	100	N	3	1.3			Fog		N	0	0	Foggy	
Shreveport, Louisiana	29.61	752.1	29.82	757.4	66	18.9	100	W	4	1.8			10s		N	2.30	58.4	Cloudy	
Smithville, North Carolina	30.10	764.5	30.14	765.5	66	18.9	94	NE	4	1.8		5c	0	NW		0	0	Fair	
Springfield, Massachusetts	29.89	759.2	30.02	762.5	52	11.1	60	Calm	0	0		8ck	0	W		0	0	Fair	
Stanwix, Arizona																			
Stockton, Texas	26.95	684.5	29.95	760.7	48	8.9	85	NW	12	5.4			10s		Calm	0.25	6.3	Cloudy	
Thatcher's Island, Mass	29.99	761.7	30.04	763.0	46	7.8	69	NW	12	5.4		0	0			0	0	Clear	
Toledo, Ohio	29.28	743.7	29.93	760.2	61	16.1	94	Calm	0	0			10s		Calm	0.02	0.5	Cloudy	
Tucson, Arizona	27.58	700.5	30.14	765.5	68	20.0	41	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.05	763.3	30.08	764.0	70	21.1	95	NE	8	3.6		0	2ks		E	0	0	Fair	
Umatilla, Oregon	29.86	758.4			40	4.4	83	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.62	752.3	29.88	758.9	71	21.7	90	S	6	2.7			10n		S	0.25	6.3	Light rain	
Virginia City, Montana	24.48	621.8	29.96	761.0	37	2.8	71	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.73	755.1	30.10	764.5	50	10.0	64	E	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.98	761.5	30.10	764.5	55	12.8	93	E	1	0.4		2ck	Fog	W	SE	0	0	Fair	
Wickenburg, Arizona					40	4.4	48	N				0	0			0	0	Clear	
Wilmington, N. Carolina	30.03	762.7	30.11	764.8	63	17.2	88	NE	2	0.9		0	0			0	0	Clear	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	29	—1.7	67	NE	3	1.3		0	0			0	0	Clear	
Wood's Holl, Mass	30.03	762.7	30.08	764.0	46	7.8	69	N	5	2.2		2c	0	NW		0	0	Fair	
Yankton, Dakota	28.82	732.0	30.15	765.8	40	4.4	82	NW	8	3.6			10s		SW	0	0	Cloudy	
Yuma, Arizona	29.92	760.0	30.08	764.0	55	12.8	68	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.11	764.8	30.16	766.1	30.0	—1.1	95	NW	16	7.2		0	4s		N	0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.84	757.9	29.86	758.4	78	25.6	82	SE	1.2	0.5		2k	4ks	E	E	0.01	0.3	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	81	27.2	87	Calm	0	0		5c	8s	SE	SW	0	0		James Gall.
Navassa, W. I.	29.75	755.6	29.83	757.7	81.5	27.5		SE			3					0.02	0.5	Cloudy	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	SE	2	0.9		0	2k			0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.72	754.9	29.74	755.4	79	26.1	90	SE				2c	0						L. Y. Bigard.
Paramaribo, D. Guiana, S. A.			30.03	762.7	84	28.9	75	SE			2	0	5k			0	0	Clear	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			65.0	18.3	84	Calm			0		10ks;s			0.62	15.7	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1,750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.5 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m., Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Mare Island, Cal.	30.09	764.3	50	10.0	47	8.3	85	NNW	8	3.6			7n		Calm			0	0		
Navy Yard, Pensacola, Fla.	30.12	765.0			76	24.4	82	E	16	7.2			9			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.08	764.0	64	17.8	37	2.8	??	NE			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	29.97	761.2	66	18.9	61.5	16.4	97	ENE			2		10n		SW	Slight	Slight			Light rain	
Adams. Montevideo, Uruguay	30.16	766.1	75	23.9	60	15.6	65	W			4		0			0	0	Light	W	Blue sky	
Alert. N. 40° 06′, E. 132° 57′	30.07†	763.8†	62	16.7	62	16.7	88	ESE			4		3		SE			Smooth		D. clouds	
Alliance, Constantinople, Turkey.	30.18	766.6	64	17.8	64	17.8	62	NNE			2		6		N&W					Pleasant	
Ashuelot. Tientsin, China	29.92	760.0	65	18.3	53	11.7	93	Calm			0		10					Smooth		Misty	
Canonicus, New Orleans, La.	29.93	760.2	54	12.2	75	23.9	90	SE			3		10							Cloudy	
Colorado, New York, N. Y.	30.19	766.8	66	18.9	57	13.9	58	N	3	1.3			5		WNW					Fair	
Despatch, Mudania, Turkey	30.20	767.1	75	23.9	66	18.9	64	NNW			2		3		Calm			Smooth		Clear	
Franklin, Norfolk, Va.	30.20	767.1	58	14.4	61	16.1	??	S	2	0.9					S	0	0				
Frolic, N. 35° 38′, W. 74° 52′	30.24	768.1	65	18.3	66	18.9	89	N			3		7ck		Calm	0	0	Smooth		D. clouds	
Gettysburg, N. 40° 30′, E. 14° 50′	29.56‡	761.0‡			71	21.7	95	N			4		1		Calm	0	0	Light	N	D. clouds	
Kearsarge, N. 8° 08′, E. 68° 50′	29.88	758.9			86	30.0	80	W			1		7		S&W	0.3	8	Smooth		D. clouds	
Lackawana, Esquimault, B. C.	30.00	762.0			51	10.6	79	Calm			0		0					Smooth		Blue sky	
Marion, Smyrna, Turkey	30.03	762.7	70	21.1	68	20.0	51	W			3		8		W	0	0	Smooth		D. clouds	
Michigan, Milwaukee, Mich.	29.46	748.3	64	17.8	55	12.8	93	NE			2		10		W					Cloudy	
Monocacy, Yokohama, Japan	29.94	760.5	64	17.8	62	16.7	100	NNE			2		10		N&E			Smooth		Drizzling	
Monongahela, N. 37° 06′, W. 28° 50′	30.26	768.6	71	21.7	71	21.7	85	SSW			3–4		ck					Smooth	W	D. clouds	
New Hampshire, Port Royal, S. C.	30.26	768.6			69	20.6	90	NE	8	3.6			2		E	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.08	764.0	63	17.2	59	15.0	82	Calm	0	0			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.05†	763.3†	69	20.6	66	18.9	89	SE			6		10					Long	W	Misty	
Ossipee, N. 41° 27′ 30″, W. 70° 07′.	30.13	765.3	69	20.6	51	10.6	65	NW			2		4		Calm			Smooth		D. clouds	
Palos, Shanghai, China	30.10	764.5	67	19.4	64	17.8	89	SE			1		1		Calm					Clear	
Pensacola, Mare Island, Cal.	30.18	766.6			52	11.1	86	SW			1–2		5			0	0			Cloudy	
Plymouth, Norfolk, Va.	30.42†	772.7†	66	18.9	61	16.1	94	Calm			0		10							Overcast	
Ranger, Shanghai, China	30.14	765.5			71	21.7	80	Calm			0		2		Calm					Pleasant	
Rio Bravo, Brownsville, Texas	29.81	757.2			72	22.2	95	WNW			4		10		NW					Drizzling	
Santee, Annapolis, Md.	30.17	766.3	65	18.3	61	16.1	88	S			3		2		SW	0	0			Cloudy	
St. Louis, League Island, Pa	29.99	761.7	55	12.8	56	13.3	87	W	5	2.2			3		W	0	0			Fair	
Swatara, New York, N. Y.	30.15	765.8			54	12.2	93	NW			1		7		NW					Foggy	
Tennessee, Yokohama, Japan	30.01	762.2	67	19.4	65	18.3	89	NNW	2	0.9			10		N&E			Smooth		Raining	
Trenton, N. 42° 55′, E. 6° 05′	30.24†	768.1†	69	20.6	66	18.9	68	SE	14	6.3			2		S&E	0	0			D. clouds	
Vandalia, Villefranche, France	30.24	768.1	66	18.9	65	18.3	44	SE			0–1		10		Calm					D. clouds	
Wabash, Boston, Mass.	30.05	763.3	53	11.7	47	8.3	55	NW	5	2.2			3		NW	0	0			D. clouds	
Wyoming, Washington, D. C.	30.30†	769.6†			60	15.6		Calm			0		7							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.06*	763.5*	77	25.0	91	ESE			3		9		ESE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic N. 44° 25′, E. 167° 57′			29.62*	752.3*	56	13.3	75	E			5		kn		E	Short	W	Raining	Capt. W. H. Kidley.
S. S. Oceanic, N. 32° 46′, E. 144° 40′			29.78	756.4	71	21.7	85	NE			3-6		10		Var.	Confused	N&NE	Raining	Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig N. 37° 6′, W. 74° 50′	N76E	9.0	30.18	766.6	61.5	16.4	80	ENE			3		5ck		E	Smooth		Blue sky	Capt. K. Undütsch.
S. S. Nürnberg, N. 48° 35′, W. 31° 35′			29.60	751.8	62.5	16.9	88	SSE			6		n		S	Rough	SSE	Raining	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Queenstown, Ireland			30.47*	773.9*	60	15.6	94	SSW			5		3		SSE	Moderate.	SW	Fine	Captain Sargent.
S. S. Ohio, N. 45° 40′, W. 55° 23′			29.23	742.4	58	14.4	88	NW			8				NW	Large	NW	Clear	Captain Morrison.
S. S. Pennsylvania, N 47° 07′ W. 31° 21′			29.67†	753.6†	63.5	17.5	97	SE			6		10		SW	Moderate	SSE	Squally	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 16′, W. 78° 10′			30.09	764.3	77	25.0	77	NE	8	3.6		0	8ks		NE	Smooth		Cloudy	Capt. James Jorgensen.

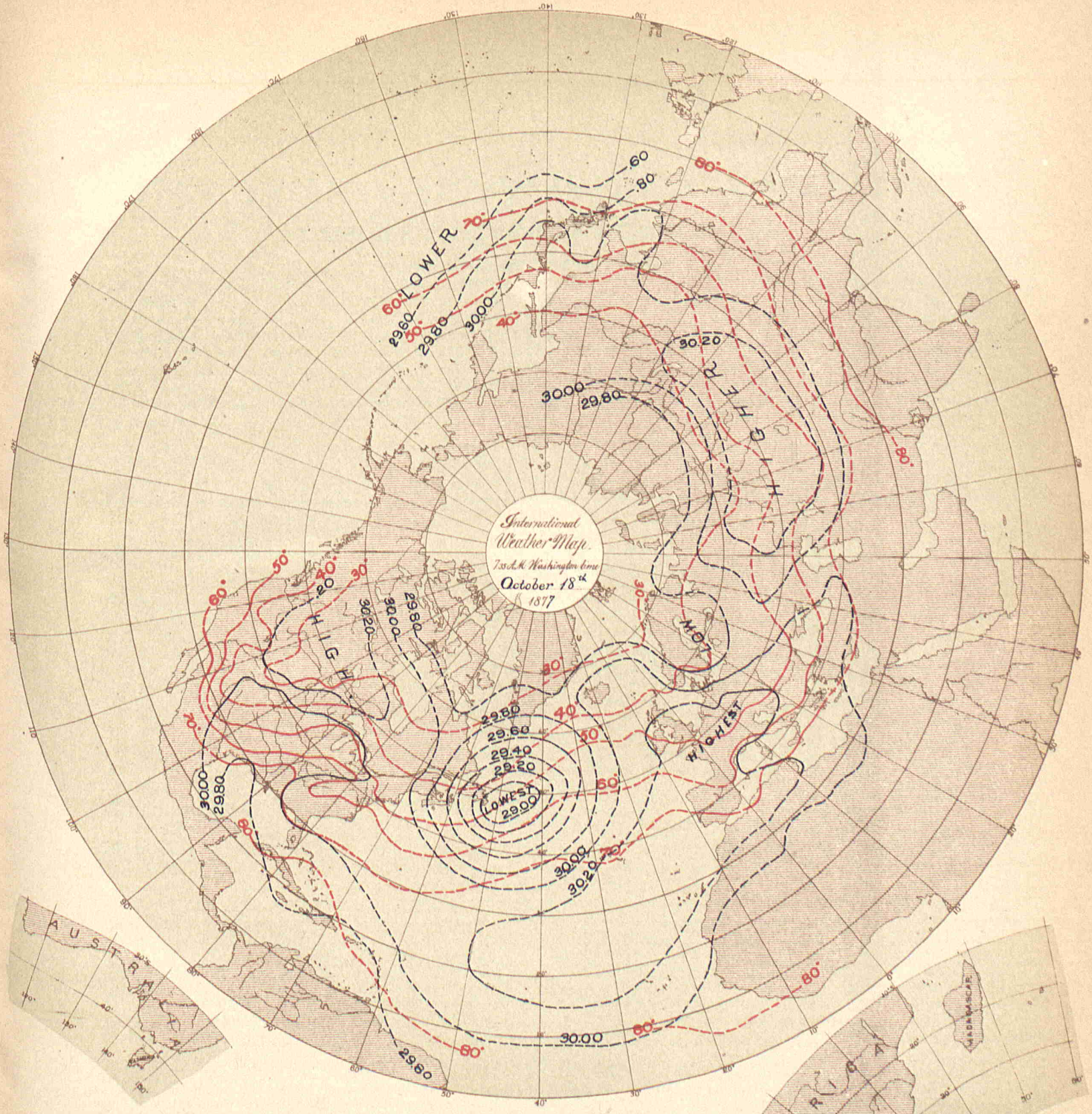
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 19, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time,
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.17	766.4	72.7	22.6	62	Calm			0		1			0	0	Clear	Michel.
Algiers			30.09	764.3	69.8	21.0	73	N			1		4			0	0	Cloudy	Peter.
La Calle			30.16	765.8	67.1	19.5	71	NE			3		3			0	0	Pretty cl'dy	Fleury.
Tunis			30.13	765.3	71.6	22.0	56	E			3		0			0	0	Clear	Jacques.
Sfax			30.21	767.2	73.4	23.0		S			3		2			0	0	Fair	Husson.
Saida			30.20	767.1	68.0	20.0	41	WNW			2		1			0	0	Very fair	Millot.
Tebessa			30.14	765.6				NE			2		0			0	0	Clear	Bourgeois.
Geriville			30.17	766.3	64.0	17.8	55	NW			3		4			0	0	Cloudy	Lemaillot.
Laghount			30.10	764.5	73.4	23.0	37	E			4		2			0	0	Fair	François.
Biskra			30.19	766.9	77.5	25.3	22	SE			1		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 800? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Gerivillo, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.72	754.9	30.28	769.1	51.8	11.0	46	NW			2		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.40	746.8	30.20	767.0	41.7	5.4	60	W			3		9			0.055	1.4		Dr. Wierzbiski.
Eperies	29.28	743.7	30.18	766.6	43.9	6.6	53	S			2		9k;s		Calm	0	0		Julius Mikolik.
Gratz	29.01	736.8	30.30	769.5	46.8	8.2	48	SSE			1		2			0	0		Andreas Rospini.
Hermannstadt	28.80	731.4	30.25	768.4	45.0	7.2	35	NNW			2		0			0	0		Prof. Reissenberger.
Kremsmünster	28.89	733.7	30.27	768.8	42.4	5.8	52	W			1		3			0	0		Prof. C. Wagner.
Lemberg	29.12	739.6	30.13	765.4	43.2	6.2	91	NW			2		4			0	0		Dr. T. Stanecki.
Pola	30.12	765.0	30.23	767.9	57.2	14.0	41	WNW			2		0			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	30.02	762.5	30.31	769.8	46.8	8.2	62	Calm			0		5			0	0		Karl Stancel.
Trieste	30.16	766.1	30.26	768.7	55.6	13.1	68	W			1		0			0	0		P. Busin.
Vienna	29.55	750.5	30.26	768.6	48.9	9.4	42	W			3		2			0	0	Clear	I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time. ERRATA.—October 18, 1877, for data for Szegedin read that opposite Szathmar; for Trieste, that opposite Vienna, for Vienna, that on the line below.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.78	731.1	30.34	770.5	44.1	6.7	56	W			1		0			0	0		Royal Observatory.
Brussels	30.11	764.9	30.32	770.1	47.8	8.8	59	W			4		10		NW	0	0		
Furnes	30.30	769.5	30.32	770.1	50.4	10.2	64	SSW			4		10			0	0		
Maeseyck	30.19	766.7	30.32	770.0	47.5	8.6	74	SW			2		10			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.97	761.2	30.07	763.8	44.0	6.7		SW	6	2.7			10			0.025	0.63	Raining	W. Boswell.
Ardrossan	29.96	761.0	29.98	761.5	47	8.3		E			1		8					Rain and fog	William McNeil.
Armagh, Observatory			30.03	762.7	55.0	12.8		SW	8	3.6			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.14	765.5	49.9	9.9		SSW	12	5.4			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			30.05	763.3	59.3	15.2		SW			1		4					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.80	756.9	30.20	767.1	50.1	10.1		S			2		10			0.04	1.0	Raining	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	85.0	29.4		E			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.22	767.6	55.0	12.8		SSW			1		10					Overcast	H. Todd. [H.C.
Cardington			30.24	768.1	54.0	12.2		W			1		7					D. clouds	John McLaren.
Chatham, School M. E.	30.14	765.5	30.27	768.8	55.2	12.9		SW			1		9					Hazy	Lt. Col. C. M. Martin, R.E.
Dartmoor	28.88	733.5	30.38	771.6	47.0	8.3		SW			4		5					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.97	761.2	30.00	762.0	52	11.1		SW			2		10					Overcast	J. Mac Gowan.
Dover	30.24	768.1	30.27	768.8	52	11.1		WSW			3		7					¾ clouded	J. Costello.
Eccles, (near Manchester)			30.14	765.5	51.7	10.9		W	0.4	0.2			10					Raining	Thomas Mackereth.
Falmouth, Observatory	30.01	762.2	30.24	768.1	55.1	12.8		S			3		7					Overcast	The Staff.
Fort Napier, (Natal)	27.54	699.5	29.75	755.6	67.7	19.8		E			2		10					Overcast	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.90	759.4	76	24.4		E			0		5					Raining	
Galway, Queen's College					56	13.3		W			4		5					D. clouds	H. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.10	764.5	73.5	23.1		SW			4		0					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.80	756.9	30.00	762.0	44.4	6.9		ENE			3		10					Raining	D. G. Maclean.
Great Yarmouth	30.23	767.8	30.24	768.1	50	10.0		W			2		5					Foggy	G. T. Watson.
Greenwich, Royal Obs'y	30.08	764.0	30.26	768.6	53.5	11.9		SW			2		10					Overcast	The Staff, for G. B. Airy.
Guernsey	30.06	763.5	30.28	769.1	51.5	10.8		SE			1		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.26	768.6	57	13.9		S			2		2			0	0	D. clouds	M. P. Moyle.
Holyhead	30.04	763.0	30.09	764.3	53	11.7		SW			5		10					Misty	John Tilston.
Jersey	30.03	762.7	30.32	770.1	49.5	9.7		SE			3		10					Overcast	J. Fisher.
Kew, Observatory			30.26	768.6	51.8	11.0		SW	15	6.7			10					Threatening	The Staff.
Kingstown	30.05	763.3	30.08	764.0	57	13.9		W			4		7					D. clouds	George Mitchell.
Leicester, Museum			30.24	768.1	54.5	12.5		SW			4		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.06	763.5	30.13	765.3	70.6	21.4		NW			1		4					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.91	759.7	30.01	762.2	43	6.1		Calm			0		2					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.96	761.0	80.0	26.7		NE			3		4			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.99	761.7	30.18	766.6	54.3	12.4		SSW			3		10c;d		WNW	0.048	1.22	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.65	753.1	30.18	766.6	52.0	11.1		SSW			4		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.22	767.6	53	11.7		SW			1		10					Overcast	F. Lucas
Plymouth	30.19	766.8	30.26	768.6	53.5	11.9		S			3		10					Gloomy	John Merrifield.
Roche's Point	30.06	763.5	30.10	764.5	58	14.4		SSW			4		10					Raining	W. Kennedy.
Saint Ann's Head	30.02	762.5	30.18	766.6	55	12.8		S			4		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys)			30.04	763.0	43.9	6.6		SE	15	6.7			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.13	765.3	56.8	13.8		NE			2		10					Raining	Sergt. W. H. Lyne.
Sheffield	29.92	760.0	30.16	766.1	53.0	11.7		SSW			1		10			0.01	0.3	Overcast	W. F. Cooper.
Silloth Rectory	30.00	762.0	30.03	762.7	51.6	10.9	96	W			3		10			0.315	8.00	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					48.4	9.1		SW			1		10					Raining	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)			29.96	761.0	45	7.2		SSE			1		10					Overcast	John Smith.
Stratfield Turgiss	30.06	763.5	30.28	769.1	54.8	12.7		W			1		8					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			30.01	762.2	49	9.4		S			1		4					D. clouds	John Trotter.
Truro, Royal Institution			30.24	768.1	57	13.9		S			4		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.09	764.3	58.2	14.6		WSW	9	4.0			7					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					52	11.1		S			4		10			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.07	763.8	30.11	764.8	69.8	21.0	49	S	12	5.4		1	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.76	755.9	55.5	13.1	77	NW			1		10k			0.01	0.3	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			30.05	763.3	46.0	7.8		E			1		10n			0.39	9.9	Raining	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.3	76.2	24.6	69	NNW	7.4	3.3		3	6	SE	NW	0.01	0.3	Cloudy	C. Meldrum.
Melbourne, Observatory	29.87	758.7	29.96	761.0	53.0	11.7	80	SW	18	8.0			10			0.02	0.5	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.97	761.2	51	10.6		SE			4		10			0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			30.00	762.0	42	5.6		W			4		10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Millimeters.	Barometer. Inches.	Millimeters.	Temperature. Fahrenheit.	Centigrade.	Relative Humidity.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0—9	Direction from—	Weather.	Observer.
S. S. Algeria, N. 51° 23′, W. 15° 5′			30.01	762.2	58	14.4		SSW			2		9	WSW		5*	SW	D. clouds	Capt. W. Watson.
S. S. Batavia, N. 46° 35′, W. 37° 45′			29.30	744.2	58	14.4		SW			5		8			5	SW	Showery	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 42° 35′, W. 52° 0′			29.71	754.6	54	12.2		NW			7		7			8	WNW; NNW	D. clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 3′			29.14	740.1	55	12.8		SSE			5		10			7	SW	Overcast	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 50° 40′, W. 14° 0′			30.05	763.3	58	14.4		SW			3		9			4	SSE	D. clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26. 21	665.7			68.4	20.2	95	NE			1		10k	3s		0.3	8.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.01	762.2	30.06	763.4	41.2	5.1	54	NW			2		2						
Fanöe	30.10	764.5	30.12	765.0	45.5	7.5	56	NW			4		3						
Godthaab, (Greenland)	29.41	747.0	29.45	748.1	33.4	0.8	77	NE			6		8						
Stykkisholm, (Iceland)	29.93	760.3	29.98	761.4	37.2	2.9	96	Calm			0		5						
Thorshavn, (Faröe)	29.98	761.4	30.01	762.3	43.0	6.1	81	WNW			2		2						
Vestervig	29.87	758.7	30.04	763.0	47.8	8.8	84	Calm			0		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.83	757.7	30.38	771.7	53.6	12	73	SE			1		8		SE	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	30.23	767.8	30.34	770.6	53 6	12.0	54	W			1		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	30.11	764.9	30.19	766.9	59.4	15.2	39	N			1					0	0	Lightly cov.	Mr. Giraud, Director.
Bar-sur-Seine	29.75	755.7	30.34	770.5	48.7	9.3	38	E			2		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	30.08	764.1	30.24	768.2	48.7	9.3	50	E	2.7	1.2			—		SSW	0	0		Albert Cheux.
Beauvais	30.07	763.8	30.36	771.2	46.4	8	51	ESE			1		2			0	0	Slightly cl'dy	Normal School.
Besançon	29.39	746.6	30.31	769.9	47.3	8.5	57	N			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.42	747.2	30.34	770.6	45.9	7.7	59	N			4	2c		W		0	0	Slightly cl'dy	Normal School.
Bourges, Normal School	29.70	754.3	30.26	768.6	48.6	9.2	61	ENE			2		2		ENE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.98	761.4	30.19	766.9	53.4	11.9	61	ESE			1	2c		Calm		0	0		The Staff.
Carcassonne, Normal School	29.78	756.3	30.20	767.0	54.1	12.3	61	E			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.26	768.5	30.33	770.4	46.4	8	72	N			4		2		N	0	0	Slightly cov.	Normal School.
Chartres, Normal School	29.65	753.2	30.23	767.8	51.1	10.6	90	SE			2		4		SW	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	30.00	762.1	30.33	770.4	48.7	9.3	69	N			1	5c			N	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.84	732.5	30.21	767.4	51.1	10.6	52	E			1		5			0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.45	747.9	30.35	770.9	43.3	6.3	42	NE			2	2c		NE		0	0	Fair	Dr. Goulet, Director.
Commune de Gréasque*	29.08	738.7	30.23	767.7	60.3	15.7	53	SW			4		8		SW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.05	763.2	30.27	768.8	53.6	12	36	E			2		5		E	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.99	761.8	30.31	769.8	48.9	9.4	50	E			4		8		E	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.35	745.6	30.31	769.9	43.7	6.5	60	N			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.19	766.8	30.29	769.3	52.2	11.2	43	E			3		8		N	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.58	751.2	30.29	769.4	42.4	5.8	81	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.30	744.2	30.39	771.8	44.2	6.8	31	NW			1		2		SSE	0	0	Slightly cov.	Normal School
Nismes, Normal School	29.95	760.6	30.15	765.8	59.0	15	78	N			2		5		S	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.95	760.8	30.34	770.7	48.6	9.2	46	E			4		2		E	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	30.10	764.6	30.35	770 8	47.7	8.7	42	ESE			1	2c				0	0	Slightly cl'dy	National Observatory.
Privas	29.16	740.7	30.24	768.2	52.7	11.5	25	NNW			2		2			0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.17	766.3	30.20	767.1	53.2	11.8	59	ENE			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.26	768.5	30.34	770.7	50.0	10.0	44	E			1		0			0	0	Clear.	F. Lucard, Director.
Tarbes, Normal School	29.14	740.2	30.21	767.3	65.3	18.5	55	SE			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.55	750 5	30.27	768.9	50.9	10.5	89	N			1		5		Calm	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.5	29.81	757.2	82.4	28										0.12	3.		L'Abbé Marchési.
Marseilles, Observatory			30.17	766.3	65.1	18.4	69	SSW			1		10					Rainy	The Staff.
Mont-Louis	24.97	634.2	30.28	769.2	46.6	8.1	47	SSE	5.6	2.50			10		W	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.05	763.3	30.33	770.3	49.1	9.5	43	E			2		7ck,k		NW	0	0		Marié Davy, Director.
Perpignan			30.19	766.8	53.6	12.0	60	S	3.7	1.67			10			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.34	542.0			32.0	0.0		SW			2		10					Rain & snow	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.60	574.1			35.2	1.8		SW			4		10			0.550	14.2	Rain & snow	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.17	766.4	30.34	770.6	49.5	9.7	42	ENE			1	1c		WNW,NW		0	0		E. Renou.
Toulouse, Observatory	29.47	748.6	30.20	767.0	54 1	12.3	45	SE			3		10			0.020	0.5		The Staff.
Tours	30.07	763.7	30.26	768.7	50.2	10.1		ENE			3		8		E	0	0		C. Marquet.
Versailles, (near Paris)			30.32	770.2	49.3	9.6	39	SE			1		5			0.004	0.11	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.89	759.3	29.92	760.0	64.2	17.9	87	SSE	5.6	2.5		2c		WSW		0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.97	761.2	30.14	765.5	46.4	8.0	47	NW			2		6			0.018	0.46		Prof. Arndt.
Breslau	29.60	751.9	30.13	765.4	39.9	4.4	80	W			4		10					Raining	Royal University Obs'y.
Carlsruhe	29.89	759.1	30.33	770.4	45.3	7.4	62	N			1		1			0	0	Light fog	Albert Senz.
Cassel	29.68	753.9	30.29	769.4	47.1	8.4	54	WNW			3		6	SW		Inap.	Inap.		Dr. H. Möhl.
Crefeld	30.13	765.2	30.29	769.4	48.2	9.0	59	W			5		9			0	0		Director Lose.
Emden	30.23	767.9	30.27	768.8	48.2	9.0	59	N			0		0			0.264	6.7		Prof. Prestel.
Frankfort on the Main	30.02	762.5	30.40	772.1	46.2	7.9	45	SW			2		2			0	0		Physical Society.
Friedrichshafen	28.85	732.9	30.34	770.5	43.9	6.6	55	SW					0			0	0		M. Wilhelm.
Hamburg	30.12	765.0	30.19	766.8	44.1	6.7	69	NW			2		0			0.205	5.2	Clear	Captain F. Hegemann.
Kiel	30.12	765.1	30.14	765.6	43.5	6.4	49	SW			4		7			0.068	1.72		Prof. G. Karsten.
Königsberg, (Prussia)	29.85	758.2	29.93	760.2	34.2	1.2	90	SE										Cloudy	Prof. E. Luther.
Köslin			29.91	759.6	34.9	1.6		N			4		4			0	0		H. Müller.
Leipsic, Observatory	29.84	757.9	30.27	768.9	43.3	6.3	62	W			4		9	WNW		0.031	0.8		Prof. Bruhns.
Memel, Naval School	29.85	758.2	29.90	759.4	41.5	5.3	47	WNW			3		9ck;ks					Squally	Reinbrechtvon Skalweit.
Neufahrwasser	29.90	759.4	29.91	759.8	36.0	2.2	94	S			3		10			0.181	4.6	Rain & snow	A. Lothes.
Posen	29.75	755.6	30.05	763.3	38.5	3.6	90	W			8		7			0.020	0.5	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.79	756.6	30.35	771.0	45.0	7.2	47	NE			1		0			0	0		Dr. Schur.
Stuttgart	29.35	745.6	30.32	770.2	43.7	6.5	43	E			1		0			0	0		Prof. Schoder.
Treves, (Trier)	29.70	754.4	30.23	767.8	46.0	7.8	52	W			3		1			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.76	730.4	30.31	769.8	43.5	6.4	43	NW			2		3ks		NNW	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.13	765.3	30.17	766.3	41.9	5.5	60	NNW			2		8					Cloudy	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.77	756.1	30.16	766.0	68.0	17.2		NE										Cloudy	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.88	759.1	29.94	760.4	81.8	27.7	40	WSW	20.0?	8.9?			0			0	0	Blue sky	
Deesa	29.48	748.8	29.96	760.9	85.1	29.5	32	S					0			0	0	Blue sky	
Bombay	29.85	758.2	29.49	759.1	84.2	29.0	78	WNW	12.0	5.4			8	WNW		0	0	D. clouds	
Poona	27.88	708.3	29.89	759.1	79.5	26.4	74	WSW					10	SW	W	0	0	Lightning	
Lahore	29.18	741.2	29.93	760.3	76.5	24.7	46	Calm	1.2	0.5						0	0		
Belgaum	27.38	695.3	29.94	760.4	72.5	22.5	86	SE	2.0	0.9			10		SE	0.52	13.2	Raining	
Bangalore																			
Roorkee	28.96	735.5	29.85	758.3	82.4	28.0	47	NW	3.0	1.3								Showery	
Agra	29.28	743.7	29.84	757.9	87.3	30.7	50	W								0	0		
Trichinopoly																			
Nagpur	28.86	733.1	29.92	759.9	75.6	24.2	83	Calm	1.6	0.7			9					Drizzling	
Madras																			
Lucknow	29.46	748.3	29.83	757.6	86.2	30.1	55	Calm	1.5	0.7			1	N		0	0	Blue sky	
Allahabad	29.52	749.9	29.83	757.8	83.5	28.6	62	Calm	1.7	0.8			2			0	0	D. clouds	
Patna	29.66	753.2	29.83	757.8	88.4	31.3	42	E	0.8	0.4			2	E	E	0	0		
Hazaribagh	27.87	707.8	29.89	759.1	77.0	25.0	64	WNW	6.4	2.9			0			0	0	Blue sky	
Cuttack	29.80	756.9	29.88	759.0	83.3	28.5	77	Calm	0.5	0.2						0	0	Blue sky	
Calcutta (Alipore)	29.85	758.3	29.88	758.8	81.2	27.3	83	WNW	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.47	748.6	29.86	758.5	79.7	26.5	78	Calm	0.9	0.4			1	W		0	0	D. clouds	
Chittagong	29.79	756.6	29.88	759.0	79.9	26.6	78	Calm	1.9	0.8			0			0	0	Blue sky	
Sibsagar	29.53	750.1	29.87	758.6	80.1	26.7	78	ENE	1.2	0.5			6			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.53	724.6	29.89	759.2	84.0	28.9	63	NW	2.5	1.1			5	W		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.25	565.1	30.18	766.6	29.8	— 1.2	57	NW			1		4	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.20	564.0	30.19	766.7	28.6	— 1.9		WSW			4		0			0	0		Signora Ernesta Manfredi.
Udine	29.82	757.3	30.23	767.9	52.9	11.6	26	E	0.7	0.3			0			0	0		Prof. Giovanni Clodig.
Padua	30.12	765.1	30.23	767.9	55.4	13.0	34	SE	1.8	0.8			1	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	30.04	763.0	30.24	768.0	54.3	12.4	36	N	0	0			4	S		0	0		Conte Alm. Da Schio.
Verona	30.02	762.6	30.25	768.3	63.0	17.2	59	SE	7.4	3.3			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.17	741.0	30.22	767.5	53.4	11.9	59	S			4		1	W		0	0		Prof. Giuseppe Calza
Milan	29.72	754.9	30.25	768.4	54.0	12.2	60	S			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.02	740.0	30.27	768.9	52.7	11.5	54	NE			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.33	745.0	30.26	768.5	53.6	12.0	47	NNW	0 7	0.3			3			0	0		Prof. P. F. Denza.
Mondovi	28.30	718.9	30.24	768.1	49.3	9.6	51	NW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.96	761.0	30.19	766.7	60.1	15.6	41	E			6		4			0	0		Prof. L. Vassallo.
Genoa	30.03	762 7	30.20	767.0	60.6	15.9	36	N	5.6	2.5			4	SW		0	0		Prof. G. M. Garibaldi
Piacenza	30.00	761 9	30.26	768.5	55.0	12.8	42	E	4.9	2.2			2			0	0		Dott. G Manzi.
Parma	29.95	760.8	30.27	768.9	56.5	13.6	40	ENE			2		0			0	0		Prof. P. Pigorini.
Florence	29.95	760.7	30.21	767.3	63.0	17.2	42	NE			2		8	WSW		0	0		Cav. F Meucci.
Leghorn	30.09	764.2	30.17	766.4	63.1	17.3	29	ENE	6.9	3.1			2			0	0		Prof. P. Monte.
Siena	28.95	735.4	30.17	766.4	57.9	14.4	36	ENE	0.7	0.3			8	W		0	0		Prof. L. Toscani.
Urbino	28.68	728.4	30.26	768.5	51.4	10.8	47	NE			2		1			0	0		Prof. P. Serpieri.
Pesaro	30.21	767.2	30.26	768.5	56.5	13.6	47	E	16.1	7.2			5	E		0	0		Prof. Luigi Guidi.
Ancona	30.13	765.4	30.24	768.2	56.5	13.6	49	E			4		2			0	0		Prof. F. DeBosis.
Grosseto	30.10	764.4	30.21	767.3	64.8	18.2	54	ENE			2		5	SE		0	0		Avv. P. Ponticelli.
Rome	29.98	761.6	30.16	766.1	64.9	18.3	55	N	0.7	0.3			5			0	0		Prof. P. A Secchi.
Naples, O. U	30.01	762.2	30.21	767.3	66.7	19.3	51	NE			2		6	SW		0	0		Prof. L. Palmieri.
Lecce					61.5	16.5	53	ENE	7.4	3.3			1			0	0		Prof. C. De Giorgi.
Cosenza	29.34	745.1	30.23	767.8	60.4	15.8	74	SE	0	0			6	SW		0	0		Prof. F. D. Conti.
Cagliari	29.86	758.5	30.05	763.3	67.3	19.6	54	NW			2		3			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.13	765.2	30.17	766.4	65.7	18.7	79	SE			4		9	SE		0.488	12.4		Prof. F. Cafiero.
Palermo	29.84	758.0	30.10	764.4	67.1	19.5	62	NE	4.9	2.2			4			0	0		Prof. G. Cacciatore.
Caltanissetta	28.17	715.6	30.11	764.9	64.0	17.8	68	SSE			2		6			0	0		Prof. A. Pagani.
Syracuse	30.06	763.5	30.13	765.4	70.5	21.4	54	SE			4		10	NE		0.039	1.0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.63	752.7	30.19	766.8	63.5	17.5	57	NW	1.3	0.6			8			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.96	761.0	30.05	763.4	61	16.1	96	NW	3	1.3			10s			0.175	4.45	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.10	586.7	30.13	765.3	53.6	12.0	69	NW	0.8	0.36		0	1s			0.06	1.5	Clear	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. Y. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,499 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.31	769.9	30.31	769.9	49.0	9.8		SW			4					0	0		
Groningen	30.15	765.9	30.21	767.3	45.5	7.5		W			2					0.228	5.8		
Helder	30.21	767.3	30.21	767.3	48.7	9.3		WSW			4					0.472	12.0		
Hellevoetsluis			30.27	768.9	49.1	9.5	79	SW			4								
Utrecht	30.23	767.9	30.28	769.1	47.7	8.7	80	W			2		10			0.016	0.4	Overcast	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instru-m'tal error and temperature. Inches.	Barometer: Corrected for instru-m'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.03	762.7	30.08	764.1	37.4	3.0	76	SSE	6.9	3.1			4			0.283	7.2		
Brönö	29.66	753.4	29.70	754.4	36.7	2.6	85	S	9	4			10					Light rain	
Christiania	29 80	756.9	29.95	760.7	42.8	6.0	28	WSW	9	4			1			0	0		
Tromsö	29.41	746.9	29.45	748.0	29.5	— 1.4	68	SSW	9	4			5			0.118	3.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.89	759.2	30.08	764.0	69.1	20.6	92	WSW	19.2	8.6			10			0	0		Dr. J. A. Sampaio
Campo Major	29.17	740.8	30.17	766.3	72.0	22.2	46	WNW	3.1	1.4			5			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.21	767.4	30.28	769.2	73.0	22.8	69	S	4.9	2.2			7			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.89	759.3	30.25	768.3	65.8	18.8	69	N	12.5	5.6			5	NNW		0	0		The Staff.
Ponta Delgada, (Azores)	30.11	764.8	30.18	766.6	71.2	21.8	91	S	8.1	3.6			2			0.020	0.5		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell: Height scale 0–9	Sea or swell: Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.62	752.4	30.06	763.4	40.3	4.6	64	SW	16	7			10						Astronomical Obs.
Wilna	29.49	749.0	29.92	760.0	36.5	2.5	84	W	7	3			8						Astronomical Obs.
Dorpat	29.42	747.3	29.67	753.6	36.0	2.2	82	WSW	7	3			10						Prof. Dr. Weihrauch
St. Petersburg	29.58	751.3	29.60	751.7	38.1	3.4	65	SSW	16	7			2						Central Physical Obs.
Kuopio	29.05	737.9	29.38	746.3	35.8	2.1	91	S	18	8			10					Raining	Ch. Forsten.
Kieff	29.48	748.8	30.14	765.5	41.0	5.0	63	WNW	13	6			8					Graupeind	Physical Cabinet.
Nikolaiev	30.23	767.9	30.30	769.7	48.7	9.3	50	NNW	4	2			1						Kurdakof.
Kertch	30.26	768.7	30.28	769.2	50.5	10.3	82	N	4	2			9						Lagorio.
Moscow	29.40	746.7	29.96	760.9	40.6	4.8	59	S	11	5			7						Meteorological Obs.
Lugan	29.95	760.7	30.15	765.9	49.8	9.9	65	WNW	4	2			5			Blank	Blank		Meteorological Obs.
Archangel	29.41	746.9	29.43	747.4	42.6	5.9	97	SSE	13	6			10					Raining	Ogorodnikof.
Tiflis	28.70	729.0	30.10	764.6	65.1	18.4	82	Calm	0	0			10					Light rain	Physical Observatory.
Astrakhan	30.29	769.3	30.21	767.2	54.0	12.2	87	N	7	3			10						Sebastianof.
Kasan	29.68	753.9	29.95	760.8	50.0	10.0	88	Calm	0	0			10						Physical Cabinet
Orenburg	30.13	765.2	30.52	775.2	36.1	2.3		E	9	4			0						Tschernischei.
Ekaterinburg	29.20	741.6	30.15	765.9	47.8	8.8	62	SSE	7	3			7						Meteorological Obs.
Nukuss	29.88	758.9	30.11	764.8	62.2	16.8	51	N	2	1			0						
Kasaly																			Bobrof.
Tashkend	28.55	725.1	30.27	768.8	54.1	12.3	91	Calm	0	0			0						Michelson.
Barnaul	29.80	757.0	30.34	770.6	43.0	6.1	65	NW	0	0			10						Meteorological Obs.
Yeniseisk	29.91	759.7	30.06	763.4	36.7	2.6	91	WNW	4	2			8						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.82	757.4	29.96	761 0	42.1	5.6	82	Calm	0	0			2						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					32.4	0.2	96	Calm	0	0			0						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.91	708.9	30.08	764.1	69.8	21.0	46	S	3.7	1.67		1	5	NNW		Inap.	Inap.	Clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.86	758.5	29.94	760.6	75.5	24.2	89	Calm	0	0		0	0			0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.10	764.5	30.20	767.0	68.2	20.1	73	W	11.2	5.0		0	2		W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.86	758.4	83.1	28.4	83	SE	0	0		6s		E	E	0	0	Clear	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.43	747.4	29.47	748.4	32.7	0.4		N			6		4					Snowing	
Umea	29.61	752.2	29.67	753.5	32.4	0.2	92	N			2		10			0	0		
Hernosand	29.63	752.7	29.69	754.0	37.0	2.8	52	NW			4		1			0	0		
Stockholm	29.58	751.4	29.76	755.9	36.0	2.2	91	NW			4		8			0	0		
Wisby	29.77	756.2	29.83	757.7	37.0	2.8	55	NW			7		10			0.012	0.3		
Sub-Series.																			
Upsala	29.68	753.9	29.76	755.8	36.7	2.6	57	NW	11.0	4.9			2	N	NW	0	0		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.82	732.1	30.27	768.9	46.6	8.1	41	N			1		0			0	0		The Observatory.
Zurich	28.64	727.5	30.32	770.0	43.9	6.6	45	N			1		0			0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.0 mm; Thermometer, —4.2 cent.; Relative Humidity, —31 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.19	766.9	55.4	13.0	92	N	20	9.0			10		N	0.087	2.2	Raining	The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.22	767.6	58.8	14.9		N			2		10						B. Stefanidès.
Valona			30.19	766.8	61.7	16.5		NW			2		2			0	0	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.91	759.8	77.9	25.5	63	N			3		8c;k		S	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			30.02	762.5	47	8.3		Calm	0	0			10s		E	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.			29.94	760.5	37	2.8	85	SW	1	0.4		0	0			0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island.			29.96	761.0	45	7.2	88	W	3	1.3		0	0			0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	29.99	761.7	46.2	7.9	83	NE			1		10s			0.078	1.98	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.87	758.7	29.91	759.7	37.0	2.8	85	W			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	30.04	763.0	30.08	764.0	45.3	7.4	100	Calm				0	0			0	0	Clear	W. H. Bevis.
*Father Point, Quebec			29.93	760.2	39	3.9	80	S	16	7.2		8k	2s	S	S	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.97	761.2	30.04	763.0	39.1	3.9	75	NW	6	2.7		0	0			0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba			30.57	776.5	22	—5.6	96	N	2	0.9		0	0			0	0	Clear	James Stewart.
Goderich, Ontario	29.22	742.2	30.00	762.0	51.9	11.1	92	NE			2		10n			0.216	5.48	Threatening	H. J. Strang, M. A
Granton, Ontario	28.88	733.5	29.98	761.5	49	9.4	100	E			1		10n			0.37	9.4	Raining	James Grant.
*Halifax, N. S.	29.85	758.2	29.99	761.7	43	6.1	83	W	5	2.2		0	0			0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.68	753.9	30.05	763.3	49.5	9.7	91	E			2	10cs	0			0.30	7.6	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.55	750.6	29.57	751.1	44	6.7	92	NW			5		10n			0.84	21.3	Overcast	E. Weedon.
*Kingston, Ontario	29.71	754.6	30.08	764.0	47	8.3	87	NE	2	0.9			10cs		Calm	Inap.	Inap.	Cloudy	S. Woods, M. A
*Montreal, Quebec	29.80	756.9	30.00	762.0	45	7.2	81	NE	1	0.4			10n			0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.38	746.2	30.08	764.0	46	7.8	96	N	8	3.6		5k	5ks	N	N	0.06	1.5	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.31	744.5	30.06	763.5	47.2	8.4	88	N			1		10n					Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.30	744.2	29.99	761.7	50	10.0	100	NE	11	4.9			10n		NE	0.49	12.4	Light rain	H. Morgan.
Port Hastings, N. S.	29.90	759.4	29.95	760.7	42.4	5.8		W	3	1.3						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.32	744.7	29.97	761.2	52	11.1	95	E	4	1.8			10n		E	0.43	10.9	Light rain	M. Payne.
*Quebec, Quebec	29.67	753.6	30.00	762.0	39	3.9	83	SW	4	1.8			10n		SW	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.62	752.3	30.08	764.0	48	8.9	85	W	4	1.8			10s		N	Inap.	Inap.	Light rain	W. H. McIntyre.
St. John, N. B.	29.85	758.2	30.02	762.5	39	3.9	77	Calm	0	0		0	0			0.15	3.8		G. Murdock, C. E.
*Saugeen, Ontario	29.34	745.2	30.04	763.0	48	8.9	95	E	4	1.8			10n			0.13	3.3	Light rain	K. Stewart.
Stayner, Ontario			30.06	763.5	46	7.8	96	Calm	0	0			10n		Calm	0.08	2.0	Light rain	R. J. Cole.
Stratford, Ontario	28.71	729.2	29.99	761.7	48.2	9.0	98	E	5	2.2			10n					Raining	C. J. MacGregor, M. A.
*Sydney, C. B.	29.88	758.9	29.91	759.7	51	10.6	78	W	7	3.1		0	0			Inap	Inap.	Clear	T. C. Hill.
*Toronto, Ontario	29.66	753.4	30.05	763.3	48	8.9	90	NE	4	1.8			10n		Calm	0.14	3.6	Light rain	Magnetic Observatory.
Windsor, N. S.	29.91	759.7	30.01	762.2	41.0	5.0	82	Calm	0	0		0	0			0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery
Sub-Series.																			
St. Johns, Newfoundland					43.0	6.1	96	W				10k	10s			0.55	14.0	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.76	755.9	29.99	761.7	52	11.1	93	Calm	0	0			10s		Calm	0.01	0.3	Cloudy	
Alpena, Michigan	29.44	747.8	30.10	764.5	48	8.9	92	N	8	3.6			10n		Calm	0.07	1.8	Light rain	
Atlantic City, New Jersey	30.03	762.7	30.05	763.3	64	17.8	94	S	12	5.4		0	Haze		Calm	0	0	Clear	
Augusta, Georgia	29.89	759.2	30.07	763.8	65	18.3	92	SE	3	1.3		5ck	5s	SE	Calm	0	0	Cloudy	
Baltimore, Maryland	29.99	761.7	30.04	763.0	60	15.6	94	SE	2	0.9			Fog		Calm	0	0	Foggy	
Barnegat, New Jersey	30.03	762.7	30.05	763.3	65	18.3	83	S	13	5.8		5c	0	NW		0	0	Fair	
Bismarck, Dakota	28.77	730.7	30.57	776.5	32	0.0	89	N	2	0.9			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.37	695.2	30.02	762.5	46	7.8	60	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.86	758.4	30.02	762.5	55	12.8	61	SW	6	2.7			10s			0	0	Cloudy	
Brackettville, Texas	28.96	735.6	30.00	762.0	52	11.1	72	W	1	0.4		0	2s		Calm	0	0	Fair	
Breckenridge, Minnesota	29.33	745.0	30.39	771.9	33	0.6	89	N	16	7.2		0	1s		Calm	0	0	Clear	
Brownsville, Texas	29.94	760.5	30.01	762.2	61	16.1	94	N	4	1.8		0	0			0	0	Clear	
Buffalo, New York	29.29	744.0	29.90	759.4	50	10.0	100	NE	6	2.7			10n		Calm	0.56	14.2	Light rain	
Burlington, Vermont	29.74	755.4	30.10	762.0	51	10.6	72	Calm	0	0			10s		Calm	0	0	Cloudy	
Cairo, Illinois	29.37	746.0	29.74	755.4	67	19.4	90	S	21	9.4			10s		S	0.96	24.4	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.89	683.0	30.38	771.6	55	10.0	51	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.05	763.3	30.06	763.5	67	19.4	90	E	1	0.4			0			0	0	Clear	
Cape Henry, Virginia	30.04	763.0	30.07	763.8	63	17.2	83	SW	12	5.4		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.09	764.3	30.11	764.8	68	20.0	94	NE	6	2.7		8k	0	SE		0	0	Cloudy	
Cape May, New Jersey	30.02	762.5	30.05	763.3	64	17.8	88	S	18	8.0		0	0			0	0	Clear	
Charleston, South Carolina	30.03	762.7	30.09	764.3	71	21.7	90	NE	4	1.8		0	5s		SE	0	0	Fair	
Cheyenne, Wyoming	24.26	616.2	30.20	767.1	32	0.0	89	N	20	8.9			10n		Calm	0.01	0.3	Light snow.	
Chicago, Illinois	29.20	741.7	29.87	758.7	55	12.8	100	NE	25	11.2			10n		Calm	0.75	19.1	Light rain	
Cincinnati, Ohio	29.21	741.9	29.82	757.4	66	18.9	90	SE	6	2.7			10n		S	0.34	8.6	Light rain	
Cleveland, Ohio	29.23	742.4	29.93	760.2	63	17.2	88	S	7	3.1			10n		SW	0.03	0.8	Light rain	
Concho, Texas					51	10.6	86	N	6	2.7		8cs	0	N		0	0	Cloudy	
Corsicana, Texas	29.52	749.8	29.99	761.7	53	11.7	79	NW	8	3.6			10s		NW	0	0	Cloudy	
Davenport, Iowa	29.25	742.9	29.88	758.9	55	12.8	93	NE	15	6.7			10n		Calm	0.37	9.4	Light rain	
Denison, Texas	29.17	740.9	29.97	761.2	49	9.4	78	N	4	1.8			10ks		N	0.04	1.0	Cloudy	
Denver, Colorado	25.03	635.8	30.25	768.3	34	1.1	79	NW	8	3.6			10s		Calm	0.21	5.3	Cloudy	
Detroit, Michigan	29.23	742.4	29.89	759.2	56	13.3	93	NE	10	4.5			10n		NE	0.40	10.2	Light rain	
Dodge City, Kansas	27.43	696.7	29.76	755.9	40	4.4	91	N	22	9.8			10s		N	0.03	0.8	Cloudy	
Dubuque, Iowa	29.28	743.7	29.97	761.2	53	11.7	79	NE	15	6.7			10s		NE	0	0	Cloudy	
Duluth, Minnesota	29.65	753.1	30.35	770.9	41	5.0	83	E	14	6.3			10ks		E	0.03	0.8	Threatening	
Eagle Pass, Texas	29.39	744.2	30.05	763.3	55	12.8	80	NW	6	2.7			10s		NW	0.06	1.5	Cloudy	
Eastport, Maine	29.93	760.2	30.00	762.0	46	7.8	76	W	2	0.9		8c	Sm'e	E	Calm	0	0	Fair	
Erie, Pennsylvania	29.23	742.4	29.93	760.2	58	14.4	93	NE	5	2.2			10s			0.16	4.1	Cloudy	
Escanaba, Michigan	29.54	750.3	30.21	767.3	44	6.7	76	N	32	14.3			10s		N	0	0	Cloudy	
Florence, Arizona	28.40	721.3	30.00	762.0	60	15.6	44	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.10	612.1	30.10	764.5	37	2.8	45	N	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico																			
Fort Gibson, Indian Ter	29.33	745.0	29.87	758.7	50	10.0	93	NW	9	4.0			10s		N	0.10	2.5	Cloudy	
Fort Griffin, Texas	28.79	731.3	30.09	764.3	46	7.8	85	NW	8	3.6		0	2s		Calm	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.79	731.3	29.92	760.0	43	6.1	83	NW	8	3.6			10s		NW	0	0	Cloudy	
Fort Sully, Dakota	28.66	728.0	30.42	772.7	32	0.0	79	NW	8	3.6		0	8s		NW	0	0	Fair	
Galveston, Texas	29.92	760.0	29.96	761.0	59	15.0	87	NW	15	6.7		0	2ks		NW	0.81	20.6	Fair	
Grand Haven, Michigan	29.30	744.2	29.94	760.5	51	10.6	97	NE	17	7.6			10s		NE	1.66	42.2	Cloudy	
Indianapolis, Indiana	29.05	737.9	29.79	756.7	65	18.3	94	SE	8	3.6			10n		SE	0.82	20.8	Light rain	
Indianola, Texas	30.01	762.2	30.04	763.0	60	15.6	81	N	22	9.8		0	0			0.05	1.3	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.02	762.5	30.04	763.0	70	21.1	90	E	3	1.3		Haze	0	Calm		0	0	Fair	
Keokuk, Iowa	29.16	740.7	29.76	755.9	55	12.8	87	NE	12	5.4			10n		Calm	0.36	9.1	Light rain	
Key West, Florida	29.91	759.7	29.94	760.5	79.0	26.1	82	NE	7	3.1		2c	2ks	Calm	Calm	0.01	0.3	Fair	
Kittyhawk, North Carolina	30.10	764.5	30.12	765.0	64	17.8	100	SE	2	0.9		0	0			0	0	Clear	
Knoxville, Tennessee	29.00	736.6	29.98	761.5	62	16.7	83	Calm	0	0			10ks		S	0	0	Cloudy	
La Crosse, Wisconsin	29.31	744.5	30.05	763.3	49	9.4	85	N	14	6.3			10s		N	0.09	2.3	Cloudy	
La Mesilla, New Mexico	26.21	665.7	30.36	771.1	38	3.3	72	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					60	15.6	82	Calm	0	0		0	5s		Calm	0	0	Fair	
Leavenworth, Kansas	28.96	735.6	29.80	756.9	52	11.1	93	N	6	2.7			10n		Calm	0.63	16.0	Light rain	
Los Angeles, California	29.66	753.4	30.10	762.0	52	11.1	53	N	6	2.7		0	0			0	0	Clear	
Louisville, Kentucky	29.30	744.2	29.84	757.9	66	18.9	94	S	8	3.6			10n		S	0.39	9.9	Light rain	
Lynchburg, Virginia	29.39	746.5	30.06	763.5	60	15.6	70	S	1	0.4		5ck	Haze	S	Calm	0	0	Fair	
Maricopa Wells, Arizona					41	5.0	32	N				0	0			0	0	Clear	
Marquette, Michigan	29.54	750.3	30.26	768.6	43	6.1	67	N	14	6.3			10s		Calm	0	0	Cloudy	
Mason, Texas	28.45	722.6	30.25	768.3	46	7.8	92	W	8	3.6		0	0			0.22	5.6	Clear	
Memphis, Tennessee	29.50	749.3	29.80	756.9	66	18.9	90	SW	2	0.9			10n		SW	0.87	22.1	Light rain	
Milwaukee, Wisconsin	29.32	744.7	30.00	762.0	52	11.1	93	NE	25	11.2			10s		NE	1.81	46.0	Cloudy	
Mobile, Alabama	29.86	758.4	29.90	759.4	72.5	22.5	87	S	16	7.2			10n		SW	0.19	4.8	Light rain	
Montgomery, Alabama	29.72	754.9	29.95	760.7	70	21.1	82	SE	7	3.1			10n		SW	0.02	0.5	Light rain	
Morgantown, West Virginia	28.94	735.1	29.98	761.5	58	14.4	75	Calm	0	0		8c	0	SW		0	0	Fair	
Mt. Washington, N. H.	23.75	603.2	30.11	764.8	40	4.4	100	W	50	22.4			Fog		W	0.10	2.5	Foggy	
Nashville, Tennessee	29.34	745.2	29.85	758.2	67	19.4	84	SE	6	2.7			10s		S	0.17	4.3	Cloudy	
New Haven, Connecticut	29.91	759.7	30.02	762.5	62	16.7	88	SW	5	2.2			10s; fg		Calm	0	0	Foggy	
New London, Connecticut	30.00	762.0	30.05	763.3	60	15.6	100	SW	7	3.1			10s		Calm	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	29.78	756.4	29.84	757.9	71	21.7	95	S	9	4.0			10n		S	0.76	19.3	Light rain	
Newport, Rhode Island	29.99	761.7	30.04	763.0	60	15.6	94	S	8	3.6			Fog			0	0	Foggy	
New York, New York	29.87	758.7	30.04	763.0	59	15.0	94	S	10	4.5			10s; fg		Calm	0.01	0.3	Cloudy	
Norfolk, Virginia	30.06	763.5	30.11	764.8	61	16.1	94	S	4	1.8		0	Fog		Calm	0	0	Clear	
North Platte, Nebraska	27.22	691.4	29.84	757.9	40	4.4	91	NW	28	12.5			10n		NW	0.09	2.3	Light rain	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	48	8.9	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	28.81	731.8	29.88	758.9	50	10.0	100	N	16	7.2			10n		N	1.29	32.8	Light rain	
Oswego, New York	29.69	754.1	30.00	762.0	53	11.7	86	Calm	0	0			10n		Calm	0.13	3.3	Light rain	
Pembina, Dakota	29.68	753.9	30.58	776.7	20	— 6.7	85	N	4	1.8		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.99	761.7	30.04	763.0	58	14.4	100	SW	8	3.6			Fog		Calm	0	0	Foggy	
Phœnix, Arizona					49	9.4	50	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.69	449.3	29.90	759.4	— 1	—18.3	100	E	30	13.4			10n		E	0.55	14.0	Light snow	
Pioche, Nevada	24.21	614.9	29.98	761.5	39	3.9	55	SW	1	0.4		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.14	740.1	29.93	760.2	57	13.9	87	Calm	0	0		10k	Fog	W	Calm	0	0	Cloudy	
Port Huron, Michigan	29.25	742.9	29.90	759.4	55	12.8	100	NE	8	3.6			10n		E	0.47	11.9	Heavy rain	
Portland, Maine	29.96	761.0	30.01	762.2	49	9.4	71	NW	2	0.9		10k	Haze	SW		0	0	Cloudy	
Portland, Oregon	30.05	763.3	30.15	765.8	50	10.0	100	N	5	2.2			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.89	632.2	30.25	768.3	43	6.1	68	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.97	761.2	29.99	761.7	75	23.9	76	E	8	3.6		0	2s		Calm	0	0	Clear	
Red Bluff, California	29.68	753.9	30.04	763.0	50	10.0	39	N	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.38	746.2	29.99	761.7	50	10.0	96	E	4	1.8			10n; fg		Calm	0.35	8.9	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.56	750.8	30.14	765.5	43	6.1	100	Calm	0	0		0	Fog		Calm	0	0	Fair	
Sacramento, California	29.96	761.0	30.04	763.0	59	10.0	78	S	2	0.9		0	0			0	0	Clear	
St. Louis, Missouri	29.15	740.4	29.70	754.4	61	16.1	97	SW	4	1.8			10n		Calm	0.97	24.6	Light rain	
St. Marks, Florida	29.98	761.5	30.00	762.0	67	19.4	90	SE	4	1.8		2cs	5s	Calm	SE	0	0	Fair	
St. Paul, Minnesota	29.33	745.0	30.17	766.3	46	7.8	68	N	12	5.4			10s		Calm	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.87	657.1	30.20	767.1	49	9.4	33	E	14	6.3		0	0			0	0	Clear	
San Antonio, Texas	29.38	746.2	29.97	761.2	55	12.8	86	N	2	0.9		0	0			0	0	Clear	
San Diego, California	29.96	761.0	30.03	762.7	60	15.6	88	N	2	0.9		0	5s		Calm	0	0	Fair	
Sandusky, Ohio	29.24	742.7	29.89	759.2	63	17.2	94	SW	8	3.6			10n		Calm	0.15	3.8	Light rain	
Sandy Hook, New Jersey	30.02	762.5	30.04	763.0	62	16.7	94	S	9	4.0			10ks		SW	0	0	Cloudy	
San Francisco, California	30.02	762.5	30.08	764.0	54	12.2	90	W	2	0.9			10s		W	0	0	Cloudy	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	24	—4.4	75	N	4	1.8		Haze	0			0.29	7.4	Clear	
Savannah, Georgia	29.98	761.5	30.07	763.8	67	19.4	94	E	4	1.8		5ck;k	Fog	SW;S		0	0	Fair	
Shreveport, Louisiana	29.69	754.1	29.91	759.7	56	13.3	100	W	6	2.7			10s		Calm	0.10	2.5	Threatening	
Smithville, North Carolina	30.10	764.5	30.13	765.3	67	19.4	94	NE	4	1.8		0	1ks		SW	0	0	Clear	
Springfield, Massachusetts	29.81	757.2	29.94	760.5	57	13.9	81	Calm	0	0			10s		Calm	0	0	Cloudy	
Stanwix, Arizona					43	6.1	60	Calm				0	0			0	0	Clear	
Stockton, Texas	27.14	689.3	30.14	765.5	41	5.0	100	NW	12	5.4			10s		NW	0.14	3.6	Cloudy	
Thatcher's Island, Mass	29.96	761.0	30.02	762.5	54	12.2	86	SW	8	3.6		2cs	8s	W	W	0	0	Cloudy	
Toledo, Ohio	29.22	742.2	29.88	758.9	58	14.4	100	E	8	3.6			10n		E	0.38	9.7	Light rain	
Tucson, Arizona	27.62	701.5	30.17	766.3	60	15.6	94	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.04	763.0	30.06	763.5	72	22.2	90	E	4	1.8		0	2ks		Calm	0	0	Fair	
Umatilla, Oregon	29.83	757.7			42	5.6	83	SE	8	3.6		0	0			0	0	Clear	
Vicksburg, Mississippi	29.59	751.6	29.84	757.9	65	18.3	94	NW	6	2.7		8k	0	NW		3.02	76.7	Clearing	
Virginia City, Montana	24.58	624.3	30.06	763.5	35	1.7	80	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.68	753.9	30.06	763.5	45	7.2	68	SE	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.93	760.2	30.04	763.0	59	15.0	100	S	4	1.8			Fog		S	0	0	Foggy	
Wickenburg, Arizona					43	6.1	42	N				0	0			0	0	Clear	
Wilmington, N. Carolina	30.03	762.7	30.11	764.8	63	17.2	94	Calm	0	0		0	Fog		Calm	0	0	Clear	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	39	3.9	55	NE	12	5.4		0	0			0	0	Clear	
Wood's Holl, Mass	30.02	762.5	30.08	764.0	59	15.0	87	SW	12	5.4			10s		SW	0	0	Cloudy	
Yankton, Dakota	28.85	732.8	30.16	766.1	44	6.7	92	NE	17	7.6			10n		Calm	0.75	19.1	Light rain	
Yuma, Arizona	29.83	757.7	30.00	762.0	52	11.1	59	NE	3	1.3		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.42	772.7	30.47	773.9	17.0	—8.3	92	W	6	2.7		3k	2s	N	N	0.15	3.8	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.87	758.7	29.89	759.2	79	26.1	86	SE	2.4	1.1		0	2ks		NE	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	81	27.2	87	Calm	0	0		8c	8s	Calm	S	0.07	1.8		James Gall.
Navassa, W. I.	29.80	756.9	29.88	758.9	83.5	28.6		E			3					0.03	0.8	Cloudy	F. M Everett.
St. Thomas, W. I.					86	30.0	79	S	2	0.9		2c	2k	S		0	0	Clear	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.77	756 1	29.79	756.7	82	27.8	83	NE				8c	0						L. V. Bigard.
Paramaribo, D. Guiana, S. A.			30.04	763.0	84	28.9	75	SE			2	3c	5ck	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.25	641.3			64.8	18.2	87	Calm			0		10ks			0.18	4.6	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.07	763.8	53	11 7	48	8.9	100	NNW	7	3.1			10		W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.08	764.0			75	23.9	90	SE	12	5.4			10			0.30	7.6			Raining	
Navy Yard, Portsmouth, N.H	30.13	765 3	71	21.7	49	9.4	93	SW			1		10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.87	758.7	63.5	17 5	61	16.1	88	NNE			4		10n		NNE	0.19	4.8			Light rain	
Adams. Montevideo, Uruguay	30.00	762.0	64	17.8	61	16.1	61	WNW			2		9		SW	0	0	None		D. clouds	
Alert. N. 39° 24′, E. 132° 00′	30.01†	762.2†	60	15 6	60	15.6	58	WNW			2		1		NW			Smooth		D clouds	
Alliance, Constantinople, Turkey.	30.26	768.6	63	17.2	58	14.4	88	NE			2		10		N					Rainy	
Ashuelot. Tientsin, China	30.00	762.0	56	13.3	47	8 3	62	NNW			1		8		S			Smooth		D. clouds	
Canonicus, New Orleans, La	29.86	758.4	52	11.1	70	21.1	95	SE			3		10		SE					Cloudy	
Colorado, New York, N. Y.	30.13	765.3	67	19.4	61	16.1	94	SSW	10	4.5			10		SSW	0.01	0.3			Foggy	
Despatch, Mudania, Turkey	30.27	768.8	70	21.1	64	17.8	73	N			1		6		NE			Moderate.	NE	Cloudy	
Franklin, Norfolk, Va.	30.18	766.6	67	19.4	62	16.7	100	SSW	7	3.1			1		SSW	0	0			Clear	
Frolic, Hampton Roads, Va.	30.20	767.1	74	23.3	75	23.9	86	SW			2		3k		Calm	0	0	Smooth		D. clouds	
Gettysburg, N. 39° 57′, E. 15° 40′	29.96‡	761.0‡			70	21.1	95	SE			3		9		Calm	0	0	Light	E	D. clouds	
Kearsarge, N. 8° 54′, E. 65° 04′	29.88	758.9			85	29.4	79	WNW			1		6		N&W	Blank	Blank	Long	S	D. clouds	
Lackawana, Port Townsend, W. T.	30.16	766.1			55	12.8	80	Calm			0		10					Smooth		D. clouds	
Marion, Smyrna, Turkey	30.31	769.9	69	20.6	67	19.4	74	SW			1		4		Calm	0	0	Smooth		D. clouds	
Michigan, Milwaukee, Mich.	29.47	748.5	61	16.1	54	12.2	93	NNE			6		10		NW					Cloudy	
Monocacy, Yokohama, Japan	29.90	759.4	64	17.8	61	16.1	94	N			3		10		N			Smooth		Drizzling	
Monongahela, N. 36° 50′, W. 25° 28′	30.30	769.6	71	21.7	70	21.1	100	SSW			5		cks		N			Smooth	S&W	D. clouds	
New Hampshire, Port Royal, S. C.	30.26	768.6			72	22.2	95	NE	4	1.8			6		NE	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.10	764.5	63	17.2	58.5	14.7	88	Calm	0	0			10		Calm	0	0	Smooth		Cloudy	
Onward, Callao, Peru	30.06†	763.5†	71	21.7	68	20.0	84	SE			3		6					Long	W	D. clouds	
Ossipee, N. 40° 49′, W. 73° 46′	30.08	764.0	70	21.1	63	17.2	89	WSW			2		10		Calm			Smooth		Misty	
Palos, Shanghai, China	30.00	762.0	70	21.1	65	18 3	89	ESE			1		2		Calm					Clear	
Pensacola, Mare Island, Cal.	30.14	765.5			52	11.1	??	N&W			0–1		10			0	0			Foggy	
Plymouth, Norfolk, Va.	30.40†	772.1†	68	20.0	62	16.7	94	E			1		0							Clear	
Ranger, Shanghai, China	30.06	763.5			71	21.7	75	SSW			1		7		SW					Cloudy	
Rio Bravo. Brownsville, Texas	29.87	758.7			63	17.2	94	W			1		4		WSW					D. clouds	
Santee, Annapolis, Md.	30.10	764.5	68	20.0	66	18.9	84	S			1		4			0	0			Cloudy	
St. Louis, League Island, Pa	29.96	761 0	58	14.4	58	14.4	94	SW	5	2.2			10		SW	0	0			Foggy	
Swatara, New York, N. Y.	30.08	764.0			63	17.2	94	SW			2		10		SW					D. clouds	
Tennessee, Yokohama, Japan	29.90	759.4	65	18.3	63	17.2	78	NNW	14	6.3			10		Calm	0.17	4.3	Smooth		Raining	
Trenton, Villefranche, France	30.23†	767.8†	66	18.9	65	18.3	84	NE	7.3	3.2			4		N&E	0	0			D. clouds	
Vandalia, Villefranche, France	30.22	767.6	65	18.3	64	17.8	48	SSE			0–1		7		SE					D. clouds	
Wabash, Boston, Mass.	30.06	763.5	58	14.4	56	13.3	69	SW	2	0.9			10		Calm	0	0			Hazy	
Wyoming, Washington, D. C.	30.28†	769.1†			63	17.2		Calm			0									Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.08*	764.0*	72	22.2	95	E			3		8		SSW	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 34° 32′, E. 139° 68′			29.62	752.3	64	17.8	89	NNE			4-6		10		Var.	High	N	Thunder-storm	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 38° 14′, W. 70° 0′	N74½E	10.0	30.14	765.5	64.0	17.8	78	NE			2		ck		NE	Tranq'l		Blue sky	Capt. K. Undütsch.
S. S. Nürnberg, N. 48° 25′, W. 36° 25′			29.00	736.6	64.5	18.1	76	S			7		k		S	Heavy	SW	Squally	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 53′ 16″, W. 15° 29′			30.37*	771.4*	60	15.6	100	S			6		7		S	Moderate	NW	Fine	Captain Sargent.
S. S. Ohio, N. 43° 09′, W. 61° 35′			30.02	762.5	55	12.8	90	NW			3		0			None		Clear	Captain Morrison.
S. S. Pennsylvania, N. 48° 47′ W. 24° 13′			29.74†	755.4†	60	15.6	94	SSE			5		Fog		SW	Long	WSW	Thick	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 33° 01′, W. 77° 28′			30.10	764.5	78	25.6	65	ESE	8	3.6		5k	0	ESE		Short		D. clouds	Capt. James Jorgensen.

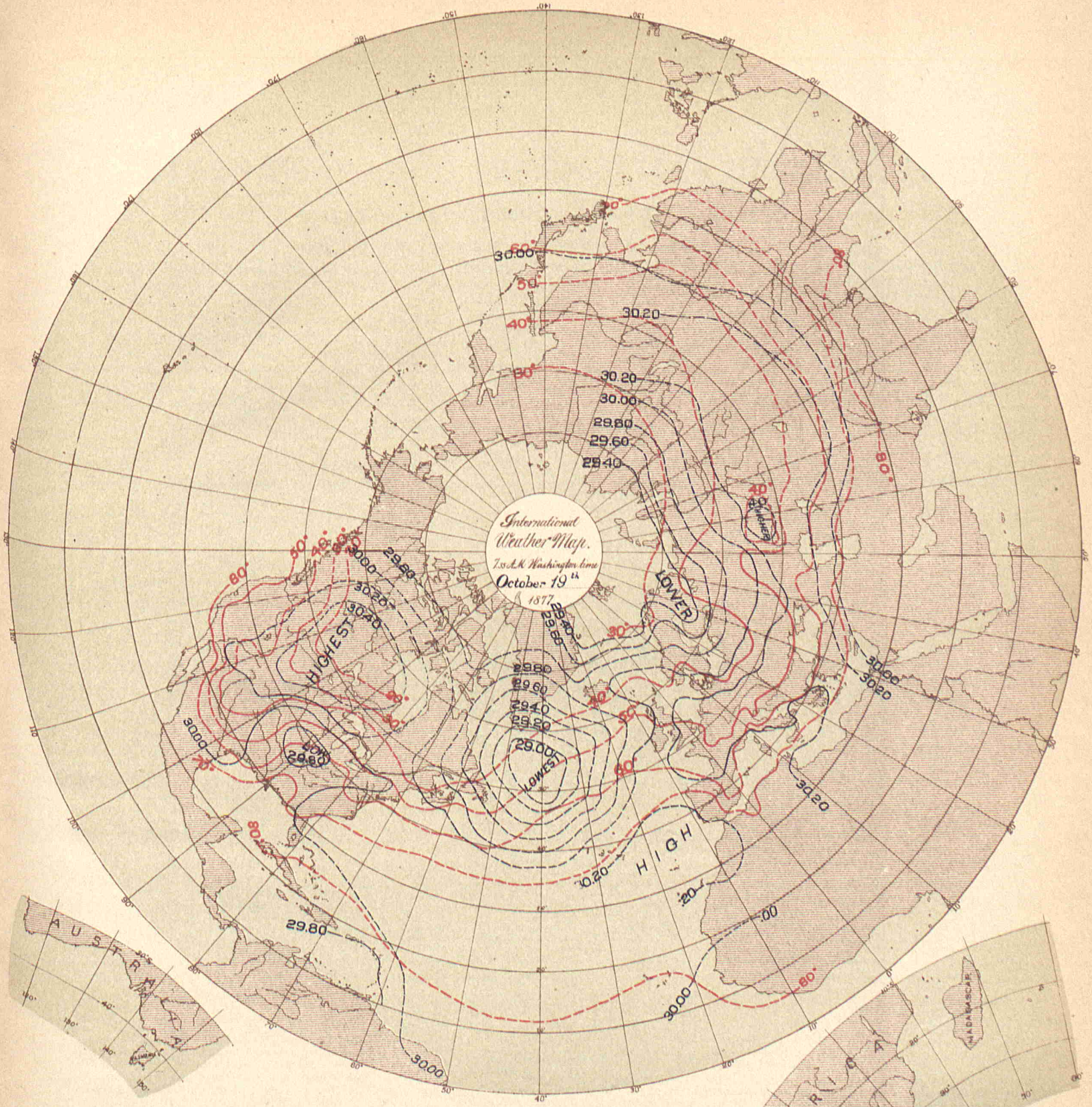
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., *fg.* and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.


International Weather Map.
7.30 A.M. Washington time
October 19th
1877
HIGHEST
LOWEST
LOWER
HIGH
LOW
30.00
30.20
29.80
29.60
29.40
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BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 20, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.20	767.0	73.4	23.0	62	NNW			1		0			0	0	Clear	Michel.
Algiers			30.13	765.3	69.8	21.0	75	NW			2		6			0	0	Cloudy	Peter.
La Calle			30.15	765.9	69.8	21.0	82	NNE			1		8			0.079	2.0	Very cloudy	Fleury.
Tunis			30.12	765.1	74.8	23.8	54	NW			1		6			0	0	Cloudy	Jacques.
Sfax			30.19	766.7	71.6	22.0		E			1		9			0	0	Covered	Husson.
Saida			30.21	767.4	63.0	17.2	53	N			2		2			0	0	Fair	Millot.
Tebessa			30.14	765.6				NW			5		9			0	0	Covered	Bourgeois.
Geriville			30.17	766.4	59.7	15.4	48	NW			4		6			0	0	Cloudy	Lemaillot.
Laghouat			30.11	764.9	68.0	20.0	47	W			4		2			0.079	2.0	Fair	François.
Biskra			30.17	766.3	76.6	24.8	33	NW			1		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.80	757.0	30.36	771.2	51.8	11.0	42	Calm			0		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.52	749.9	30.31	769.9	46.0	7.8	59	NE			1		4			0	0		Dr. Wierzbiski.
Eperies	29.43	747.4	30.33	770.3	46.4	8.0	55	S			3		6s		Calm	0	0		Julius Mikolik.
Gratz	29.07	738.4	30.35	771.0	47.5	8.6	52	SE			3		0			0	0		Andreas Rospini.
Hermannstadt	28.92	734.6	30.38	771.7	45.7	7.6	35	NW			1		0			0	0		Prof. Reissenberger.
Kremsmünster	28.88	733.6	30.26	768.7	42.4	5.8	67	NNE			1		3			0	0		Prof. C. Wagner.
Lemberg	29.29	743.9	30.31	769.8	42.6	5.9	69	W			2		3			0.031	0.8		Dr. T. Stanecki.
Pola	30.21	767.3	30.32	770.2	57.0	13.9	40	WSW			1		1c			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	30.11	764.8	30.40	772.1	48.9	9.4	59	SE			1		0			0	0		Karl Stancel.
Trieste	30.20	767.0	30.30	769.6	56.5	13.6	69	NW			1		0			0	0	Clear	P. Busin.
Vienna	29.60	751.9	30.31	769.8	51.8	11.0	43	Calm			0.		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmuster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.75	730.3	30.28	769.2	48.7	9.3	49	SW			1		2			0	0		
Brussels	30.01	762.2	30.21	767.3	51.3	10.7	51	SW			5	0	0			0	0	Clear	Royal Observatory.
Furnes	30.19	766.8	30.21	767.4	55.0	12.8	73	SSW			4		0			0	0		
Maeseyck	30.06	763.5	30.19	766.8	51.8	11.0	60	WSW			4		7			0	0		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.92	760.0	30.02	762.5	44.2	6.8		W	2	0.9			10			0.145	3.69	Misty	W. Boswell.
Ardrossan	29.94	760.5	29.96	761.0	56	13.3		SE			1		7					D. clouds	William McNeil.
Armagh, Observatory			29.94	760.5	54.6	12.6		SSE	10	4.5			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.02	762.5	55.3	12.9		SE	8	3.6			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.89	759.2	57.7	14.3		SE			2		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.62	752.3	30.02	762.5	55.6	13.1		SW			1		10			0.04	1.0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	85	29.4		E			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.10	764.5	62.0	16.7		SW			2		10k					Overcast	H. Todd. [H. C.
Cardington			30.12	765.0	59.0	15.0		W			1		6					D. clouds	John McLaren.
Chatham, School M. E	30.01	762.2	30.14	765.5	62.2	16.8		S			2		1					Blue sky	Lt.Col. C.M.Martin, R.E.
Dartmoor	28.67	728.2	30.16	766.1	51.4	10.8		SW			3		5					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.94	760.5	29.97	761.2	53	11.7		SE			2		10					Overcast	J. Mac Gowan.
Dover	30.15	765.8	30.17	766.3	54	12.2		WSW			3		2					¾ clouded	J. Costello.
Eccles, (near Manchester)			30.04	763.0	54.7	12.6		S	1.1	0.5			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.88	758.9	30.11	764.8	56.7	13.7		S			4		9					Overcast	The Staff.
Fort Napier, (Natal)	27.66	702.6	29.89	759.2	61.7	16.5		NE			2		10					Overcast	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.92	760.0	79	26.1		Calm			0		5					D. clouds	
Galway, Queen's College					55	12.8		SW			2		10					Raining	R. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.11	764.8	73.0	22.8		W			4		6					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.77	756.1	29.97	761.2	50.6	10.3		NNE			1							Foggy	D. G. Maclean.
Great Yarmouth	30.10	764.5	30.11	764.8	52	11.1		W			3		4					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.97	761.2	30.14	765.5	59.6	15.3		SW			1		1					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.95	760.7	30.07	763.8	55	12.8		SSE			2		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.10	764.5	59	15.0		SW			4		6k			0	0	Hazy	M. P. Moyle.
Holyhead	29.94	760.5	30.00	762.0	56	13.3		SSW			3		10					Misty	John Tilston.
Jersey	29.93	760.2	30.22	767.6	54.6	12.6		S			3		2					Blue sky	J. Fisher.
Kew, Observatory			30.14	765.5	57.8	14.3		SW	11	4.9			2					Hazy	The Staff.
Kingstown	29.95	760.7	29.98	761.5	57	13.9		S			3		9					Overcast	George Mitchell.
Leicester, Museum			30.10	764.5	54.4	12.4		SW			2		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.05	763.3	30.12	765.0	70.8	21.6		SE			2		8					Overcast	Sergt. Fred Travis, A. H. C.
Nairn	29.88	758.9	29.98	761.5	42	5.6		Calm			0		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			29.97	761.2	81.0	27.2		NE			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.90	759.4	30.09	764.3	58.2	14.6		SSE			4		10k;d		W	0.001	0.03	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.55	750.6	30.07	763.8	57.0	13.9		SW			2		9					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.12	765.0	57	13.9		SW			1		3c					Blue sky	F. Lucas
Plymouth	30.06	763.5	30.13	765.3	57.7	14.3		S			1		10					Gloomy	John Merrifield.
Roche's Point	29.89	759.2	29.94	760.5	56	13.3		SSW			5		10					Raining	W. Kennedy.
Saint Ann's Head	29.88	758.9	30.04	763.0	57	13.9		S			4		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys)			30.02	762.5	44.2	6.8		SE	6	2.7			4					Solar halo	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.25	768.3	56.0	13.3		NE			2		10					Showery	Sergt. W. H. Lyne.
Sheffield	29.80	756.9	30.04	763.0	58.2	14.6		SW			1		4			0.04	1.0	Blue sky	W. F. Cooper.
Silloth Rectory	29.96	761.0	29.99	761.7	59.6	15.3	82	W			1		2			0.300	7.62	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					53.1	11.7		S			1		10					Drizzling	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.91	759.7	45	7.2		ESE			2		10					Overcast	John Smith.
Stratfield Turgiss	29.95	760.7	30.17	766.3	54.8	12.7		SW			1		5					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.97	761.2	47	8.3		Calm			0		6					Misty	John Trotter.
Truro, Royal Institution			30.13	765.3	59	15.0		S			6		8					Gloomy	W. Newcombe.
Valencia, Observatory			29.81	757.2	57.9	14.4		S	39	17.4			10					Raining	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					51	10.6		S			3		10			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.89	759.2	29.93	760.2	73.0	22.8	44	NW	13	5.8		0	4						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.08	764 0	44.5	6.9	80	S			2		5k			0.13	3.3		Francis Abbott, F.R.A.S
Leith, Restalrig Park			30.00	762.0	50.0	10.0		E			1		10ks			0.26	6.6	Overcast	Andrew Gibb.
Mauritius, Observatory	29.90	759.4	30.09	764.3	75.7	24.3	70	ESE	18.0	8.0		0	4		SE	0.01	0.3	Squally	C. Meldrum.
Melbourne, Observatory	30.17	766.3	30.26	768.6	50.0	10.0	58	S	20	8.9			10			0.05	1.3	Misty	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.86	758.4	52	11.1		S			6		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.98	761.5	42	5.6		N			4	5	7	N					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 51° 52′, W. 7° 33′			29.92	760.0	57	13.9		SSW			4		10			5*	SW	Raining	Capt. W. Watson.
S. S. Batavia, N. 48° 25′, W. 30° 50′			29.32	744.7	56	13.3		W			4		6			4	WSW	Showery	Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 43° 25′, W. 49° 55′			29.88	758.9	44	6.7		WSW			2		9			5	WNW; NNW	Overcast	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 32′, W. 34° 6′			29.04	737.6	51	10.6		NNW			6		5			5	NNW	D clouds	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, N. 51° 20′, W. 10° 10′			29.84	757.9	57	13.9		SSE			6					4	SSE	Foggy	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0			68.0	20.0	91	SE			2	4ck		W		0.2	5.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,755.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.91	759.6	29.95	760.8	45.7	7.6	67	W			2		10						
Fanöe	29.94	760.5	29.96	761.0	44.8	7.1	91	S			2		9						
Godthaab, (Greenland)	29.11	739.3	29.15	740.4	36.7	2.6	93	Calm			0		10						Raining
Stykkisholm, (Iceland)	29.69	754.1	29.73	755.2	38.7	3.7	97	SE			6		8						
Thorshavn, (Faröe)	29.99	761.7	30.02	762.6	42.3	5.7	71	SE			2		10						
Vestervig	29.72	755.0	29.89	759.3	45.7	7.6	91	W			2		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.76	756.0	30.32	770.0	51.8	11	42	SW			1		2		N	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.15	765.8	30.26	768.7	56.5	13.6	52	SW			2		0			0	0	Clear	Bonvarne, Director.
Avignon, Normal School	30.19	766.8	30.27	768.8	60.8	16	50	N			1		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.71	754.5	30.28	769.1	53.8	12.1	36	W			2		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	30.08	764.1	30.25	768.3	53.8	12.1	37	E	1.6	0.7					SW	0	0		Albert Cheux.
Beauvais	29.97	761.2	30.26	768.7	48.6	9.2	50	E			1		0			0	0	Clear	Normal School.
Besançon	29.45	748.0	30.34	771.2	50.0	10	55	S			3		2		W	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.45	748.1	30.38	771.6	50.5	10.3	63	NW			2		0			0	0	Clear	Normal School.
Bourges, Normal School	29.65	753.4	30.22	767.6	49.3	9.6	61	SE			2		0			0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.88	758.9	30.10	764.5	61.3	16.3	67	SSW			3		3cs		SSW	0	0		The Staff.
Carcassonne, Normal School	29.93	760.2	30.35	770.9	53.2	11.8	78	E			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	30.15	765.8	30.23	767.8	55.6	13.1	50	N			4		0			0	0	Very clear	Normal School.
Chartres, Normal School	29.60	751.7	30.16	766.0	58.3	14.6	98	SW			1		8			0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.96	760.9	30.28	769.0	55.6	13.1	55	Calm			0		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.86	733.0	30.21	767.3	59.0	15.0	24	N			1		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.37	746.1	30.28	769.0	47.1	8.4	59	E			2		0			0	0	Very clear	Dr. Goulet, Director.
Commune de Gréasque*	29.16	740.7	30.30	769.7	61.7	16.5	41	N			2		5		N	0	0	½ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.03	762.8	30.23	767.7	57.2	14	40	E			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.97	761.1	30.28	769.1	47.5	8.6	57	E			2		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.37	746.1	30.32	770.0	46.6	8.1	64	SSE			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	30.13	765.4	30.23	767.9	57.2	14.0	57	SE			3		2		NW	0	0	¼ covered	T. Carré, Director.
Mâcon, Normal School	29.58	751.2	30.28	769.2	45.7	7.6	75	S			2		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.27	743.5	30.35	770.8	47.1	8.4	52	NNW			1		10		SSE	0	0	Covered	Normal School
Nismes, Normal School	30.04	763.0	30.24	768.1	59.0	15	59	NW			2		5		SE	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.79	756.7	30.17	766.2	51.4	10.8	37	NE			2		0			0	0	Clear	Bernard, Director.
Paris, Observatory	30.02	762.4	30.26	768.7	49.5	9.7	44	E			1		0			0	0	Clear	National Observatory.
Privas	29.19	741.3	30.27	768.9	51.1	10.6	52	NNW			2		2			0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.21	767.3	30.24	768.1	57.6	14.2	55	SSW			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.15	765.7	30.23	767.9	52.3	11.3	39	E			2		0			0	0	Clear	F. Lucard, Director.
Tarbes, Normal School	29.17	740.9	30.23	767.9	66.2	19	83	W			2		5		W	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.58	751.4	30.30	769.7	55.4	13	77	SE			1		1			0	0	Clear	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	756.8	29.82	757.5	79.5	26.4										1.26	32.		L'Abbé Marchési.
Marseilles, Observatory			30.23	767.9	67.8	19.9	53	SW			1		6			0	0	Cloudy	The Staff.
Mont-Louis	25.02	635.6	30.34	770.6	48.0	9.2	56	S	5.6	2.50			7		SSW	0.059	1.5		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.97	761.1	30.24	768.1	52.3	11.3	42	E			1		0			0	0		Marié Davy, Director.
Perpignan			30.30	769.6	51.6	10.9	82	NE	1.9	0.83			7		S	0.236	6.0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.36	542.5			32.9	0.5		SW			1		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.65	575.2			44.1	6.7		SW			1		1			0.346	8.8	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.10	764.4	30.26	768.6	52.2	11.2	41	SE			1		0			0	0		E. Renou.
Toulouse, Observatory	29.58	751.2	30.30	769.6	54.9	12.7	78	[illegible]			1		9			0.283	7.2		The Staff.
Tours	30.13	765.3	30.25	768.3	49.6	9.8	52	SE			1		0			0	0	Clear	C. Marquet.
Versailles, (near Paris)			30.26	768.7	54.3	12.4	47	SE			1		0			0	0	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.07	763.7	30.10	764.4	45.9	7.7	70	NW	4.5	2.0			0			0.232	5.9	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the offical series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-leve; at Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.98	761.5	30.15	765.8	46.0	7.8	81	S			1		10			0.124	3.15		Prof. Arndt.
Breslau	29.73	755.1	30.26	768.6	44.6	7.0	60	SW			3		10			0.087	2.21		Royal University Obs'y.
Carlsruhe	29.85	758.3	30.30	769.5	47.8	8.8	62	SW			2		9			0	0		Albert Senz.
Cassel	29.69	754.0	30.30	769.5	46.8	8.2	71	SW			2		6	SW		0	0		Dr. H. Möhl.
Crefeld	30.04	762.9	30.20	767.0	53.6	12.0	43	SW			4		5			0	0		Director Lose.
Emden	30.09	764.3	30.13	765.2	48.2	9.0	97	W			3		10			0.276	7.0		Prof. Prestel.
Frankfort on the Main	29.98	761.6	30.36	771.2	48.9	9.4	32	SSW			2		2			0.016	0.4		Physical Society.
Friedrichshafen	28.87	733.4	30.36	771.2	41.0	5.0	76	SW					4	WNW		0	0		M. Wilhelm.
Hamburg	30.00	761.9	30.07	763.7	43.9	6.6	91	SW			5		10n			0.091	2.3	Rainy	Captain F. Hegemann.
Kiel	29.98	761.5	30.00	761.9	44.6	7.0	91	SW			2		10			0.063	1.60		Prof. G. Karsten.
Königsberg, (Prussia)	29.99	761.7	30.07	763.8	37.4	3.0	79	SW										Cloudy	Prof. E. Luther.
Köslin			30.04	763.0	39.7	4.3		SW			2		4			0.012	0.3		H. Müller.
Leipsic, Observatory	29.85	758.2	30.29	769.3	44.6	7.0	66	WSW			3		10	W		0.020	0.5		Prof. Bruhns.
Memel, Naval School	29.95	760.8	30.00	762.0	41.5	5.3	82	WNW			7		10n					Raining	Reinbrechtvon Skalweit.
Neufahrwasser	30.08	764.0	30.10	764.4	40.8	4.9	75	SW			3		10			0	0		A. Lothes.
Posen	29.93	760.2	30.23	767.8	43.2	6.2	76	W			5		10			0.646	16.4	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.77	756.1	30.33	770.4	47.5	8.6	57	Calm			0		8	WNW		0	0		Dr. Schur.
Stuttgart	29.32	744.8	30.28	769.2	48.3	9.2	46	E			1		9	E		0	0		Prof. Schoder.
Treves, (Trier)	29.64	752.8	30.16	766.1	49.8	9.8	54	WNW			3		2			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.76	730.6	30.31	769.9	45.1	7.3	41	WNW			1		3cs	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.06	763.5	30.09	764.3	43.7	6.5	91	SSW			4		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.88	759.0	30.28	769.0	58.6	14.8		NE										Cloudy	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.90	759.5	29.95	760.8	81.7	27.6	43	WSW	17.07	7.67			0			0	0	Blue sky	
Deesa	29.38	746.1	29.85	758.2	83.4	28.6	39	Calm					0			0	0	Blue sky	
Bombay	29.84	757.8	29.88	758.8	84.6	29.2	74	NNW	15.0	6.7			5	WSW		0	0	Misty	
Poona	27.86	707.5	29.86	758.3	79.4	26.3	77	SW					10	W	SW	0	0	Lightning	
Lahore	29.19	741.4	29.94	760.6	74.8	23.8	44	Calm	1.3	0.6			0			0	0		
Belgaum	27.37	695.2	29.93	760.3	72.7	22.6	88	SE	4.0	1.8			10		SE	0	0	Thunder; lightn'g	
Bangalore																			
Roorkee	28.98	736.1	29.88	759.1	78.0	25.6	25	NW	1.7	0.8						0	0		
Agra	29.26	743.1	29.82	757.4	81.8	27.7	45	N								0	0		
Trichinopoly																			
Nagpur	28.83	732.2	29.87	758.7	81.6	27.6	66	SE	1.8	0.8			9			0	0	Gloomy	
Madras																			
Lucknow	29.49	749.1	29.86	758.6	82.3	27.9	39	Calm	2.8	1.2						0	0	Blue sky	
Allahabad	29.54	750.2	29.84	758.0	81.2	27.3	61	Calm	0.6	0.3			0			0	0	Blue sky	
Patna	29.65	753.1	29.83	757.6	88.6	31.4	45	W	0.8	0.4			2	W	W	0	0		
Hazaribagh	27.86	707.6	29.87	758.7	78.6	25.9	66	W	5.9	2.6			2		W	0	0		
Cuttack	29.82	757.5	29.90	759.5	84.8	29.3	87	Calm	0.6	0.3						0	0	Blue sky	
Calcutta (Alipore)	29.83	757.8	29.86	758.3	81.7	27.6	79	W	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.48	747.5	29.82	757.4	76.8	24.9	86	Calm	1.5	0.7			0			0.03	0.8	Blue sky	
Chittagong	29.78	756.4	29.87	758.8	80.9	27.2	76	Calm	0.9	0.4			0			0	0	Blue sky	
Sibsagar	29.54	750.2	29.87	758.8	74.9	23.8	90	ESE	2.0	0.9			10	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.51	724.1	29.86	758.5	84.7	29.3	65	NW	2.6	1.2			1	NW		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.33	567.2	30.26	768.7	33.6	0.9	51	NW			2		7	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.31	566.7	30.29	769.4	32.5	0.3		WSW			1		5	ESE		0	0		Signora Ernesta Manfredi.
Udine	29.91	759.8	30.33	770.4	54.1	12.3	24	E	0.7	0.3			1			0	0		Prof. Giovanni Clodig.
Padua	30.21	767.3	30.32	770.1	54.5	12.5	27	N	3.1	1.4			1			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.10	764.4	30.29	769.4	55.4	13.0	31	SE	0	0			0			0	0		Conte Alm. Da Schio.
Verona	30.09	764.2	30.31	769.9	60.6	15.9	69	SE	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.28	743.7	30.32	770.2	54.1	12.3	59	S			2		0			0	0		Prof. Giuseppe Calza
Milan	29.84	757.8	30.37	771.3	53.2	11.8	56	E			2		3	NNW		0	0		Ab. Gio. Capelli.
Pavia	29.98	761.6	30.34	770.5	54.0	12.2	46	SE			1		4	SE		0	0		Prof. Gio. Cantoni.
Moncalleri	29.43	747.4	30.35	770.9	52.0	11.1	62	NNW	0.7	0.3			6			0	0		Prof. P. F. Denza.
Mondovi	28.39	721.0	30.32	770.2	49.5	9.7	46	NW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.03	762.7	30.25	768.4	61.2	16.2	30	E			4		1			0	0		Prof. L. Vassallo.
Genoa	30.10	764.6	30.27	768.9	60.8	15.7	31	N	8.7	3.9			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.10	764.4	30.35	771.0	54.5	12.5	36	E	3.8	1.7			1			0	0		Dott. G Manzi.
Parma	30.01	762.2	30.35	770.8	56.7	13.7	39	SE			2		1			0	0		Prof. P. Pigorini.
Florence	30.04	763.1	30.30	769.7	60.3	15.7	39	NNE			2		0			0	0		Cav. F Meucci.
Leghorn	30.18	766.5	30.26	768.7	61.7	16.5	40	E	11.9	5.3			2			0	0		Prof. P. Monte.
Siena	29.04	737.7	30.26	768.7	59.0	15.0	39	ESE	2.5	1.1			8	W		0	0		Prof. L. Toscani.
Urbino	28.76	730.6	30.34	770.7	50.0	10.0	65	NE			2		10			0	0		Prof. P. Serpieri.
Pesaro	30.29	769.4	30.34	770.7	54.7	12.6	72	N	26.2	11.7			10			0	0		Prof. Luigi Guidi.
Ancona	30.21	767.2	30.32	770.0	58.3	14.6	49	N			4		10			0	0		Prof. F. De Bosis.
Grosseto	30.18	766.5	30.29	769.4	63.7	17.6	46	NE			2		4	SE		0	0		Avv. P. Ponticelli.
Rome	30.06	763.4	30.23	767.9	64.6	18.1	52	NNW	7.4	3.3			8			0	0		Prof. P. A Secchi.
Naples, O. U.	30.04	763.0	30.24	768.1	65.1	18.4	53	NE			2		10	SW		0	0		Prof. L. Palmieri.
Lecce					61.7	16.5	50	SSE	7.4	3.3			4			0	0		Prof. C. De Giorgi.
Cosenza	29.41	747.0	30.30	769.7	59.9	15.5	78	NE	0.7	0.3			10			0	0		Prof. F. D. Conti.
Cagliari	29.87	758.8	30.07	763.6	69.1	20.6	59	W			2		3	E		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.18	766.6	30.23	767.8	64.2	17.9	86	SE			4		10	NW		3.074	78.1		Prof. F. Cafiero.
Palermo	29.86	758.4	30.11	764.8	67.1	19.5	68	NE	3.1	1.4			10			0	0		Prof. G. Cacciatore.
Caltanissetta	28.08	713.3	30.02	762.6	62.4	16.9	65	E			6		10	W		0.039	1.0		Prof. A. Pagani.
Syracuse	30.07	763.6	30.14	765.5	65.5	18.6	84	ENE			6		10	E		1.020	25.9		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.72	754.8	30.27	768.9	61.2	16.2	58	NW	2.5	1.1			8			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.04	752.8	29.74	755.4	63	17.2	94	E	3	1.3			10n			0	0	Misty	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.13	587.5	30.17	766.4	53.6	12.0	87	SW	2.2	1.00		0	3n			0.004	0.1	Foggy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.20	767.0	30.20	767.0	53.6	12.0		SW			4					0	0		
Groningen	30.03	762.7	30.08	764.1	47.5	8.6		SW			4					0.417	10.6		
Helder	30.10	764.4	30.10	764.4	51.8	11.0		WSW			4					0.146	3.7		
Hellevoetsluis			30.16	766.1	53.1	11.7	77	SW			4								
Utrecht	30.13	765.2	30.17	766.4	51.3	10.7	75	SW			4		8			0	0	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind: Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds: Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.85	758.2	29.91	759.6	41.7	5.4	72	NNW	10 3	4.6			1			0	0		
Brönö	29.71	754.5	29.74	755.5	32.0	0 0	72	N	7	3			8			0.283	7.2		
Christiania	29.60	751.7	29.74	755.5	42.6	5.9	63	N	7	3			10			0	0		
Tromsö	29.30	744.1	29.34	745.2	28.8	— 1.8	96	SW	4	2			10			0.551	14.0	Light snow.	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.65	753.0	30.23	767.8	64.0	17.8	92	W	6.9	3.1			10			1.732	44.0		Dr. J. A. Sampaio
Campo Major	29.17	740.9	30.18	766.5	70.3	21.3	45	ESE	2.5	1.1			9	ESE		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.13	765.2	30.20	767.0	74.5	23.6	49	SSE	3.1	1.4			3			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.84	758.0	30.20	767.1	64.9	18.3	65	NNE	7.4	3.3			3	N		0	0		The Staff.
Ponta Delgada, (Azores)	29.81	757.2	29.88	759.0	65.1	18.4	96	W	9.8	4.4			10			0.917	23.3	Raining.	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell: Height scale 0–9	Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.78	756.3	30.21	767.4	40.3	4.6	79	SW	11	5			10					Raining.	Astronomical Obs.
Wilna	29.69	754.0	30.12	765.0	39.9	4.4	76	SSW	9	4			9						Astronomical Obs.
Dorpat	29.65	753.1	29.90	759.5	34.9	1.6	91	SSW	9	4			10					Snowing	Prof. Dr. Weihrauch
St. Petersburg	29.80	756.8	29.81	757.2	35.2	1.8	59	SW	20	9			4						Central Physical Obs.
Knopio	29.19	741.5	29.52	749.9	34.3	1.3	100	SW	18	8			10					Rain & snow	Ch. Forsten.
Kieff	29.59	751.6	30.25	768.3	38.3	3.5	65	WNW	18	8			10						Physical Cabinet.
Nikolaiev	30.31	769.8	30.38	771.6	50.5	10.3	38	W	13	6			1						Kurdakof.
Kertch	30.34	770.6	30.36	771.1	49.5	9.7	66	NNE	9	4			10						Lagorio.
Moscow	29.67	753.7	30.24	768.1	38.7	3.7	58	SSW	7	3			3						Meteorological Obs.
Lugan	30.07	763.6	30.27	768.9	45.7	7.6	64	E	4	2			8						Meteorological Obs.
Archangel	29.32	744.7	29.34	745.2	33.8	1.0	92	SSE	34	15			10					Snowing	Ogorodnikof.
Tiflis	28.77	730.8	30.17	766.3	65.7	18.7	77	Calm	0	0			8						Physical Observatory.
Astrakhan	30.24	768.0	30.15	765.9	58.5	14.7	77	NE	7	3			9						Sebastianof.
Kasan	30.04	762.9	30.32	770.0	42.8	6.0	55	Calm	0	0			7						Physical Cabinet
Orenburg																			Tschernischef.
Ekaterinburg	29.29	743.9	30.24	768.0	51.1	10.6	79	NW	4	2			10						Meteorological Obs.
Nukuss	29.92	759.9	30.15	765.7	65.7	18.7	42	NE	0	0			0						
Kasaly																			Bobrof.
Tashkend	28.63	727.2	30.35	771.0	52.9	11.6	91	Calm	0	0			0						Michelson.
Barnaul	29.97	761.2	30.51	774.9	40.6	4.8	71	N	4	2			9						Meteorological Obs.
Yeniseisk	30.15	765.8	30.30	769.5	34.5	1.4	85	W	2	1			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.79	756.7	29.93	760.3	45.6	7.6	47	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					33.8	1.0	100	E	2	1			0					Foggy	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.98	710.7	30.17	766.2	67.1	19.5	51	NE	29.8	13.33		2	1	N		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.7	29.99	761.8	76.3	24.6	88	Calm	0	0		0	0			Inap.	Inap.	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.08	764.1	30.18	766.6	69.4	20.8	67	SSW	8.2	3.7		3	5	W	SW	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.89	759.2	82.4	28.0	92	E				3kn	4kn		SE	0.098	2.50	Overcast.	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. instead of 8:19 a. m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Low'r 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.47	748.4	29.50	749.4	30.2	—1.0		NW			4		0			0.157	4.0		
Umea	29.53	750.1	29.58	751.4	34.5	1.2	77	Calm			0		7			0	0		
Hernosand	29.61	752.0	29.66	753.3	39.9	4.4	32	NW			2		5			0	0		
Stockholm	29.52	749.8	29.70	754.3	41.0	5.5	53	SW			4		7			0	0		
Wisby	29.78	756.3	29.84	757.8	41.7	5.4	63	W			6		7			0	0		
Sub-Series.																			
Upsala	29.61	752.2	29.69	754.1	38.3	3.5	71	WSW	8.7	3.9			9	W		0	0		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.87	733.2	30.31	769.9	47.7	8.7	52	N			1		0			0	0		The Observatory.
Zurich	28.66	728.0	30.34	770.5	43.7	6.5	58	NW			1		3			0	0	Foggy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +7.1 mm; Thermometer, —3.4 cent.; Relative Humidity, —20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.30	769.7	55.9	13.3	63	NNE	20	9.0			10		NNE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.35	770.8	67.1	19.5		N			1		0						B. Stefanidès.
Valona			30.24	768.2	62.1	16.7		NW			1		0			0	0	Clear	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.92	759.9	81.1	27.3	65	N			2		5cs			0	0	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second); the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			30.17	766.3	35	1.7		NE	5	2.2			10s		NE	0.13	3.3	Cloudy	W. R. Bigg.
*Chatham, N. B.			30.05	763.3	36	2.2	73	NW	7	3.1		2k	8ks	NW	NW	0.03	0.8	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			29.98	761.5	43	6.1	64	N	9	4.0			8ks		N	0.020	0.51	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.95	760.7	30.15	765.8	34.0	1.1	77	NE			3	3cs	7s	W		0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.95	760.7	29.98	761.5	34.4	1.3	60	W			1					0	0	Overcast	H. A. Johnson.
Esquimault, B. C.	29.88	758.9	29.93	760.2	44.3	6.8	100	N				1cs				0	0	Hazy	W. H. Bevis.
*Father Point, Quebec			30.12	765.0	35	1.7	50	NW	8	3.6			10s		N	0.03	0.8	Cloudy	J. McWilliams.
Fredericton, N. B.	30.06	763.5	30.12	765.0	36.2	2.3	63	NW	3	1.3		9ck	0			Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			30.26	768.6	32	0.0	90	S	14	6.3		0	2ks		S	0	0	Fair	James Stewart.
Goderich, Ontario	29.36	745.7	30.17	766.3	39.5	4.2	86	NE			2		10n			0	0	Cloudy	H. J. Strang, M. A
Granton, Ontario	28.96	735.6	30.09	764.3	39	3.9	91	NE			1		10n			0.40	10.2	Cloudy	James Grant.
*Halifax, N. S.	29.80	756.9	29.93	760.2	45	7.2	88	N	9	4.0		2cs	5ks	N		0.160	4.06	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.75	755.6	30.13	765.3	40.2	4.6	74	E			5	10cs				0.50	12.7	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.63	752.6	29.66	753.4	46	7.8	77	W			3		10n			0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.80	756.9	30.19	766.8	37	2.8	77	NE	12	5.4		10cs	0	Calm		0.15	3.8	Cloudy	S. Woods, M. A
*Montreal, Quebec	29.97	761.2	30.18	766.6	33	0.6	72	N	12	5.4		0	2ks		SW	0.05	1.3	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.50	749.3	30.23	767.8	32	0.0	85	N	9	4.0		2ck	5ks	N	N	0.01	0.3	Fair	Rev. R. Mosley
Peterboro, Ontario	29.38	746.2	30.16	766.1	34.7	1.5	71	N			2		10n			0.20	5.1	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.34	745.2	30.04	763.0	42	5.6	100	NE	18	8.0			10n		NE	1.18	30.0	Light rain	H. Morgan.
Port Hastings, N. S.	29.91	759.7	29.96	761.0	38.9	3.8		N	2	0.9						0	0	Dark	Peter Grant.
Port Stanley, Ontario	29.38	746.2	30.04	763.0	41	5.0	91	NE	11	4.9			10n		NE	1.97	50.0	Light rain	M. Payne.
*Quebec, Quebec	29.83	757.7	30.17	766.3	37	2.8	77	E	1	0.4			10n		E	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.78	756.4	30.26	768.6	33	0.6	65	NE	6	2.7		8cs	0	N		0.02	0.5	Fair	W. H. McIntyre.
St. John, N. B.	29.89	759.2	30.06	763.5	38	3.3	72	N	13	5.8		9k	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.44	747.8	30.16	766.1	37	2.8	86	E	5	2.2			10ks		E	0.10	2.5	Cloudy	R. Stewart.
Stayner, Ontario			30.17	766.3	33	0.6	89	NE	3	1.3			10n		NE	0.24	6.1	Threatening	R. J. Cole.
Stratford, Ontario	28.77	730.7	30.09	764.3	37.3	2.9	87	NE	9	4.0			10s			0.605	15.37	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.88	758.9	29.91	759.7	45	7.2	78	N	5	2.2		8c	5ks	W	N	0.04	1.0	Fair	T. C. Hill.
*Toronto, Ontario	29.75	755.6	30.14	765.5	38	3.3	70	NE	8	3.6			10n		Calm	0.19	4.8	Cloudy	Magnetic Observatory.
Windsor, N. S.	29.88	758.9	29.98	761.5	44.5	6.9	84	N	12	5.4			10n			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery
Sub-Series.																			
St. Johns, Newfoundland					44.0	6.7		SW				10ks	10ns			0.01	0.3	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.82	757.4	30.05	763.3	41	5.0	100	N	6	2.7			10n		Calm	0.98	24.9	Light rain	
Alpena, Michigan	29.54	750.3	30.19	766.8	34	1.1	90	NE	6	2.7			10n		NE	0.12	3.0	Light snow	
Atlantic City, New Jersey	29.92	760.0	29.94	760.5	66	18.9	90	SW	6	2.7		10c	0	SW		0	0	Cloudy	
Augusta, Georgia	29.80	756.9	29.98	761.5	70	21.1	92	SE	2	0.9			10n		S	0.06	1.5	Light rain	
Baltimore, Maryland	29.89	759.2	29.94	760.5	65	18.3	89	SW	5	2.2		2ck	5s; sm	W	SW; Calm	0	0	Cloudy	
Barnegat, New Jersey	29.90	759.4	29.92	760.0	65	18.3	94	SW	11	4.9		5cs	2s	SW	SW	0	0	Fair	
Bismarck, Dakota	28.51	724.1	30.30	769.6	27	— 2.8	88	Calm	0	0		0	1s		Calm	0	0	Clear	
Boise City, Idaho	27.27	692.6	29.91	759.7	43	6.1	51	S	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.86	758.4	30.02	762.5	46	7.8	92	NE	10	4.5			10n		NE	0.49	12.4	Light rain	
Brackettville, Texas	29.00	736.6	30.05	763.3	51	10.6	58	W	6	2.7		0	0			0	0	Clear	
Breckenridge, Minnesota	29.32	744.7	30.39	771.9	25	— 3.9	88	N	2	0.9		0	0			0	0	Clear	
Brownsville, Texas	30.11	764.8	30.18	766.6	61	16.1	70	NW	6	2.7		0	0			0	0	Clear	
Buffalo, New York	29.32	744.7	30.04	763.0	41	5.0	100	NE	12	5.4			10n		NE	1.33	33.8	Light rain	
Burlington, Vermont	29.86	758.4	30.13	765.3	34	1.1	69	N	7	3.1		10c	0	N		0.13	3.3	Cloudy	
Cairo, Illinois	29.49	749.0	29.87	758.7	59	15.0	87	S	3	1.3			10s		SW	0.22	5.6	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.90	683.2	30.38	771.6	42	5.6	58	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.98	761.5	29.98	761.5	69	20.6	90	Calm	0	0		2cs	0	SW		0	0	Fair	
Cape Henry, Virginia	29.98	761.5	30.01	762.2	67	19.4	79	SW	6	2.7			10s		SW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.03	762.7	30.04	763.0	73	22.8	81	SW	6	2.7		5c;ck	0	W		0	0	Fair	
Cape May, New Jersey	29.92	760.0	29.94	760.5	67	19.4	84	S	22	9.8			10ks		SW	0	0	Cloudy	
Charleston, South Carolina	29.96	761.0	30.02	762.5	72	22.2	90	S	4	1.8		8cs	0	SW		0.10	2.5	Fair	
Cheyenne, Wyoming	24.23	615.4	30.17	766.3	26	— 3.3	88	NW	16	7.2		0	0			0.02	0.5	Clear	
Chicago, Illinois	29.27	743.4	29.96	761.0	48	8.9	92	NE	24	10.7			10n		NE	2.55	64.8	Light rain	
Cincinnati, Ohio	29.17	740.9	29.79	756.7	62	16.7	88	S	2	0.9			Fog		S	0.40	10.2	Dense fog	
Cleveland, Ohio	29.25	742.9	29.97	761.2	51.5	10.8	82	NE	14	6.3			10s		NE	1.72	43.7	Cloudy	
Concho, Texas					43	6.1	67	NW	6	2.7		0	0			0	0	Clear	
Corsicana, Texas	29.54	750.3	30.02	762.5	48	8.9	85	W	6	2.7		0	5s		W	0	0	Fair	
Davenport, Iowa	29.36	745.7	30.01	762.2	45	7.2	92	NE	14	6.3			10s		NE	0.48	12.2	Cloudy	
Denison, Texas	29.18	741.2	29.98	761.5	47	8.3	85	W	10	4.5			10ks		W	0.06	1.5	Cloudy	
Denver, Colorado	25.02	635.5	30.24	768.1	25	— 3.9	88	Calm	0	0		0	0			0.34	8.6	Clear	
Detroit, Michigan	29.32	744.7	29.99	761.7	47	8.3	92	NE	11	4.9			10n		NE	2.30	58.4	Light rain	
Dodge City, Kansas	27.48	698.0	29.85	758.2	34	1.1	90	N	28	12.5			10s		N	0.18	4.6	Cloudy	
Dubuque, Iowa	29.38	746.2	30.09	764.3	41	5.0	83	NE	12	5.4			10s		NE	0.22	5.6	Cloudy	
Duluth, Minnesota	29.51	749.5	30.32	770.1	36	2.2	80	NE	10	4.5		0	2s		Calm	Inap.	Inap.	Clear	
Eagle Pass, Texas	29.42	747.3	30.19	766.8	47	8.3	69	NW	1	0.4		0	0			0	0	Clear	
Eastport, Maine	29.97	761.2	30.04	763.0	39	3.9	56	N	12	5.4		5ck	5s	W	N	0.25	6.3	Cloudy	
Erie, Pennsylvania	29.23	742.4	29.94	760.5	47	8.3	92	NE	18	8.0			10n		NE	2.07	52.6	Light rain	
Escanaba, Michigan	29.59	751.6	30.28	769.1	35	1.7	70	NE	13	5.8		5c	0	NE		0	0	Fair	
Florence, Arizona	28.39	721.1	29.99	761.7	64	17.8	29	NE				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.16	613.6	30.16	766.1	32	0.0	69	N	6	2.7		0	0			0	0	Clear	
Fort Craig, New Mexico																			
Fort Gibson, Indian Ter	29.31	744.5	29.85	758.2	50	10.0	93	SW	8	3.6			10s		W	0	0	Cloudy	
Fort Griffin, Texas	28.81	731.8	30.11	764.8	45	7.2	68	NW	12	5.4			10s		Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.71	729.2	29.90	759.4	44	6.7	84	W	16	7.2			10s		NW	0.14	3.6	Cloudy	
Fort Sully, Dakota	28.64	727.4	30.43	772.9	25	— 3.9	87	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	30.04	763.0	30.08	764.0	53	11.7	79	NW	20	8.9		0	0			0	0	Clear	
Grand Haven, Michigan	29.40	746.7	30.06	763.5	43	6.1	83	NE	19	8.5			10s		NE	0.05	1.3	Cloudy	
Indianapolis, Indiana	29.10	739.1	29.86	758.4	56	13.3	93	NE	5	2.2			10s		Calm	0.89	22.6	Threatening	
Indianola, Texas	30.12	765.0	30.15	765.8	53	11.7	79	NW	10	4.5		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.98	761.5	30.00	762.0	72	22.2	85	SE	4	1.8		5k	0	SW		Inap.	Inap.	Fair	
Keokuk, Iowa	29.25	742.9	29.86	758.4	48	8.9	85	NE	12	5.4			10s		Calm	1.69	42.9	Cloudy	
Key West, Florida	29.94	760.5	29.97	761.2	80.5	26.9	78	E	3	1.3		0	2ks		E	0	0	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.04	763.0	68	20.0	90	W	8	3.6		2ck	5ks	W	W	0	0	Fair	
Knoxville, Tennessee	28.94	735.1	29.92	760.0	60	15.6	94	N	4	1.8			10ks		SW	0.58	14.7	Cloudy	
La Crosse, Wisconsin	29.43	747.5	30.20	767.1	36	2.2	70	NE	12	5.4			10s		NE	0	0	Cloudy	
La Mesilla, New Mexico	26.24	666.5	30.38	771.6	35	1.7	80	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					54	12.2	61	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.03	737.3	29.87	758.7	46	7.8	92	N	10	4.5			10n		N	1.31	33.3	Light rain	
Los Angeles, California	29.62	752.3	29.95	760.7	53	11.7	53	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.29	744.0	29.84	757.9	62	16.7	94	Calm	0	0			Fog		Calm	0.47	11.9	Dense fog	
Lynchburg, Virginia	29.29	744.0	29.95	760.7	68	20.0	84	S	1	0.4		5k	5ks	NW	S	0.10	2.5	Cloudy	
Maricopa Wells, Arizona					41	5.0	33	N				0	0			0	0	Clear	
Marquette, Michigan	29.54	750.3	30.26	768.6	38	3.3	71	N	10	4.5		0	0			0	0	Clear	
Mason, Texas	28.47	723.1	30.28	769.1	45	7.2	68	W	12	5.4		0	0			0	0	Clear	
Memphis, Tennessee	29.59	751.6	29.90	759.4	56	13.3	87	S	2	0.9			10s		SW	0.32	8.1	Cloudy	
Milwaukee, Wisconsin	29.41	747.0	30.11	764.8	46	7.8	77	NE	32	14.3			10s		NE	Inap.	Inap.	Cloudy	
Mobile, Alabama	29.95	760.7	29.99	761.7	62.5	16.9	85	NW	6	2.7			10s		N	0.03	0.8	Cloudy	
Montgomery, Alabama	29.70	754.4	29.93	760.2	66	18.9	92	NW	8	3.6			10n		NW	0.22	5.6	Light rain	
Morgantown, West Virginia	28.86	733.0	29.88	758.9	64	17.8	78	S	5	2.2		0	8s		S	0.02	0.5	Fair	
Mt. Washington, N. H.	23.71	602.2	30.07	763.8	30	— 1.1	100	NW	18	8.0			Fog		NW	0.25	6.3	Foggy	
Nashville, Tennessee	29.33	745.0	29.85	758.2	62	16.7	94	Calm	0	0		2k	2s	S	S	0.08	2.0	Fair	
New Haven, Connecticut	29.85	758.2	29.96	761.0	50	10.0	100	NE	10	4.5			10n; fg			0.45	11.4	Light rain	
New London, Connecticut	29.94	760.5	29.99	761.7	49	9.4	100	NE	7	3.1			10n		NE	0.25	6.3	Light rain	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	60.5	15.8	68	NW	12	5.4		1c	0	Calm		0.07	1.8	Clear	
Newport, Rhode Island	29.94	760.5	29.99	761.7	50	10.0	93	NE	7	3.1			10n		NE	0.12	3.0	Light rain	
New York, New York	29.76	755.9	29.94	760.5	57	13.9	87	NE	11	4.9			Fog		Calm	0.03	0.8	Foggy	
Norfolk, Virginia	29.97	761.2	30.03	762.7	65	18.3	94	S	8	3.6		10ck	0	NW		0	0	Cloudy	
North Platte, Nebraska	27.50	693.4	30.02	762.5	27	— 2.8	77	NW	16	7.2		0	0			0	0	Clear	
Olympia, Washington Ter.	29.86	758.4	29.99	759.4	51	10.6	93	SE	1	0.4			10n		Calm	0.04	1.0	Light rain	
Omaha, Nebraska	28.96	735.6	30.07	763.8	36	2.2	100	N	13	5.8			10n		N	2.35	59.7	Light rain	
Oswego, New York	29.74	755.4	30.07	763.8	42	5.6	83	N	14	6.3			10s		NE	0.36	9.1	Cloudy	
Pembina, Dakota	29.46	748.3	30.33	770.4	29	— 1.7	88	SE	6	2.7		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.88	758.9	29.93	760.2	64	17.8	89	SW	7	3.1		8c	0	W		0	0	Fair	
Phœnix, Arizona					48	8.9	36	Calm				0	0			0	0	Clear	
Pike's Peak, Colorado	17.79	451.8	30.00	762.0	— 2	—18.9	67	NW	16	7.2		0	0			0.17	4.3	Clear	
Pioche, Nevada	24.17	613.9	29.94	760.5	38	3.3	41	W	3	1.3		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.66	738.1	29.84	757.9	63	17.2	88	SW	8	3.6			10s		W	0.20	5.1	Cloudy	
Port Huron, Michigan	29.36	745.7	30.03	762.7	45	7.2	84	E	14	6.3			10ks		E	1.07	27.2	Threatening	
Portland, Maine	30.01	762.2	30.06	763.5	45	7.2	68	NE	18	8.0			10n			0.43	10.9	Light rain	
Portland, Oregon	29.90	759.4	29.99	761.7	49	9.4	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.88	631.9	30.24	768.1	44	6.7	54	W				0	0			0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	76	24.4	81	E	6	2.7		0	0			0.03	0.8	Clear	
Red Bluff, California	29.59	751.6	29.95	760.7	50	10.0	45	N	4	1.8		1k	0	Calm		0	0	Clear	
Rochester, New York	29.43	747.5	30.05	763.3	42	5.6	91	NE	16	7.2			10n		NE	0.98	24.9	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.41	747.0	29.98	761.5	43.5	6.4	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.85	758.2	29.94	760.5	51	10.6	78	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.26	743.2	29.82	757.4	57	13.9	87	N	4	1.8	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
St. Marks, Florida	29.93	760.2	29.94	760.5	75	23.9	90	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
St. Paul, Minnesota	29.37	746.0	30.24	768.1	33	0.6	89	N	3	1.3	.....	0	0	.....	.....	0	0	Clear.	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.79	655.0	30.12	765.0	48	8.9	42	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.44	747.8	30.04	763.0	47	8.3	85	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.92	760.0	29.99	761.7	60	15.6	88	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.30	744.2	29.97	761.2	51	10.6	100	NE	30	13.4	.....	.....	10n	.....	Calm	2.92	74.2	Light rain	
Sandy Hook, New Jersey	29.90	759.4	29.92	760.0	59	15.0	94	NE	12	5.4	.....	.....	10ks	.....	SW	0	0	Cloudy	
San Francisco, California	29.93	760.2	30.00	762.0	53	11.7	93	SW	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Santa Fé, New Mexico	23.37	593.6	29.91	759.7	29	—1.7	89	NE	4	1.8	.....	Haze	2s	.....	Calm	0	0	Fair	
Savannah, Georgia	29.91	759.7	30.00	762.0	73	22.8	90	S	3	1.3	.....	5ck	5s	SW	Calm	0	0	Cloudy	
Shreveport, Louisiana	29.77	756.1	29.99	761.7	48	8.9	100	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.02	762.5	30.05	763.3	73	22.8	85	SE	6	2.7	.....	10cs	0	SW	.....	0	0	Cloudy	
Springfield, Massachusetts	29.82	757.4	29.96	761.0	47	8.3	92	N	5	2.2	.....	.....	10n	.....	N	0.68	17.3	Heavy rain	
Stanwix, Arizona	.....	.....	.....	.....	50	10.0	42	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.18	690.4	30.18	766.6	37	2.8	80	W	12	5.4	.....	0	0	.....	.....	0.03	0.8	Clear	
Thatcher's Island, Mass.	29.98	761.5	30.04	763.0	48	8.9	85	NE	16	7.2	.....	.....	10s	.....	.....	0.42	10.7	Cloudy	
Toledo, Ohio	29.30	744.2	29.97	761.2	50	10.0	100	NE	20	8.9	.....	.....	10n	.....	NE	3.11	79.0	Heavy rain	
Tucson, Arizona	27.58	700.5	30.13	765.3	54	12.2	48	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	74	23.3	90	SE	4	1.8	.....	5ck	5s	SW	Calm	0	0	Cloudy	
Umatilla, Oregon	29.67	753.6	.....	.....	42	5.6	83	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.76	755.9	30.02	762.5	53	11.7	86	W	8	3.6	.....	0	0	.....	.....	0.01	0.3	Clear	
Virginia City, Montana	24.45	621.0	29.93	760.2	33	0.6	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.58	751.3	29.96	761.0	48	8.9	70	SE	2	0.9	.....	0	1s	.....	Calm	0	0	Clear.	
Washington, D. C.	29.83	757.7	29.94	760.5	66	18.9	90	S	1	0.4	.....	.....	10ks	.....	W	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	40	4.4	48	E	.....	.....	.....	0	0	.....	.....	0	0	Clear.	
Wilmington, N. Carolina	29.95	760.7	30.03	762.7	71	21.7	85	SE	4	1.8	.....	8k	0	SW	.....	0	0	Fair	
Winnemucca, Nevada	29.70	652.8	30.06	763.5	40	4.4	40	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass.	29.96	761.0	30.01	762.2	49	9.4	93	NE	5	2.2	.....	.....	10n	.....	NE	0.09	2.3	Light rain	
Yankton, Dakota	28.97	735.8	30.34	770.6	28	—2.2	82	N	8	3.6	.....	2cs	0	NW	.....	0.04	1.0	Fair	
Yuma, Arizona	29.83	757.7	30.00	762.0	58	14.4	31	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.21	767.3	30.26	768.6	20.5	—6.4	93	N	10	4.5	.....	3ck	0	N	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.90	759.4	29.92	760.0	80	26.7	82	Calm	0	0	.....	2c	0	Calm	.....	Inap.	Inap.	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.12	765.0	30.13	765.3	80	26.7	82	Calm	0	0	.....	2c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.90	759.4	29.98	761.5	84	28.9	.....	NE	.....	.....	2	.....	.....	.....	.....	0	0	Cloudy	F. M Everett.
St. Thomas, W. I.	.....	.....	.....	.....	87	30.6	76	NE	2	0.9	.....	8ck	4ks	E	.....	0	0	Cloudy	G. O. Gellich.
Pt-a-Pitre, G'd'loupe, W. I.	29.81	757.2	29.83	757.7	83	28.3	87	E	.....	.....	.....	5c	5ks	.....	E	.....	.....	.....	L. V. Bigard.
Paramaribo, D. Guiana, S. A.	.....	.....	29.99	761.7	85	29.4	72	E	.....	.....	2	4c	6k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.32	643.1	.....	.....	62.2	16.8	89	Calm	.....	.....	0	.....	10ks	.....	.....	0.47	11.9	Light rain	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,700 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.: Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.: Phœnix, 1,800 (?) ft., or 548.7 (?) m.: Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.: Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.486 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.03	762.7	59	15.0	50	10.0	93	NW	7	3.1			9		N&W	0	0			Overcast; fog	
Navy Yard, Pensacola, Fla.	30.08	764.0			70	21.1	80	NW	10	4.5			7		NE	0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.10	764.5	71	21.7	45	7.2	92	NE	6	2.7			10			0.7	18.			Rainy	
Naval Hospital, Yokohama, Japan	29.72	754.9	67	19.4	64	17.8	92	E			3		8ks;d		SE	0.01	0.3			Cloudy	
Adams. Montevideo, Uruguay	29.94	760.5	68	20.0	67	19.4	71	NNW			2		6		NE	0	0	None		D. clouds	
Alert. N 38° 30′, E. 131° 40′	29.56†	750.8†	60	15.6	60	15.6	94	W			6		10		W			Moderate.	W	Squally	
Alliance, Constantinople, Turkey.	30.40	772.1	62	16.7	58	14.4	64	NE			5		10		N&E					Overcast	
Ashuelot. Tientsin, China	30.00	762.0	60	15.6	41	5.0	74	Calm			0		10					Smooth		Blue sky	
Canonicus, New Orleans, La	30.01	762.2	47	8.3	61	16.1	71	NW			3		1		NW					Clear	
Colorado, New York, N. Y.	30.00	762.0	65	18.3	58	14.4	88	NNE	8	3.6			10		NNE	0.06	1.5			Foggy	
Despatch, Mudania, Turkey	30.35	770.9	68	20.0	60	15.6	65	NE			5–6		7		NE			Moderate.	NE	Squally	
Franklin, Norfolk, Va.	30.10	764.5	64	17.8	67	19.4	100	S	6	2.7					S	0	0				
Frolic, Potomac River	30.07	763.8	69	20.6	69	20.6	74	SW			3		10ks		Calm	0	0			D. clouds	
Gettysburg, N. 38° 35′, E. 15° 50′	30.02‡	762.5‡			67	19.4	100	ESE			3		10			Blank	Blank	Light	S	D. clouds	
Kearsarge, N. 9° 30′, E. 61° 55′	29.90	759.4			85	29.4	87	N			1		5		N&W	0	0	Long	S	D. clouds	
Lackawana, Port Townsend, W. T.	29.98	761.5			49	9.4	85	Calm			0		10					Smooth		Foggy	
Marion, Smyrna, Turkey	30.15	765.8	69	20.6	67	19.4	60	NE			3		2		Calm	0	0	Smooth		D. clouds	
Michigan, Milwaukee, Mich	29.55	750.6	66	18.9	48	8.9	78	W			5		10		W					Cloudy	
Monocacy, Yokohama, Japan	29.70	754.4	67	19.4	65	18.3	89	NNE			2		10		N	Blank	Blank	Smooth		D. clouds	
Monongahela, N. 36° 30′, W. 20° 56′	30.20	767.1	71	21.7	71	21.7	90	SSW			5		8ks					Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.20	767.1			77	25.0	86	S	7	3.1			8			0	0			D. clouds	
Omaha, Valparaiso, Chili	30.18	766.6	63	17.2	60	15.6	71	SSE	4	1.8			5		S	0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.06†	763.5†	70	21.1	68	20.0	84	SE			2		8					Long	W	Hazy	
Ossipee, New York, N. Y.	29.95	760.7	66	18.9	60	15.6	88	NE			3		10		NE					Misty	
Palos, Shanghai, China	30.10	764.5	64	17.8	53	11.7	54	W			1		0							Clear	
Pensacola, Mare Island, Cal.	30.06	763.5			54	12.2	87	SW			2		10			0	0			Overcast	
Plymouth, Norfolk, Va.	30.32†	770.1†	70	21.1	66	18.9	94	SSE			1		10							Overcast	
Ranger, Shanghai, China	30.20	767.1			60	15.6	71	NNW			1		0							Clear	
Rio Bravo. Brownsville, Texas	30.04	763.0			57	13.9	87	WNW			2		2		NW					D. clouds	
Santee, Annapolis, Md.	30.01	762.2	69	20.6	68	20.0	84	SW			2		9		ESE	0	0			Cloudy	
St. Louis, League Island, Pa	29.89	759.2	64	17.8	68	20.0	70	NW	2	0.9			8		W	0.01	0.3			Fair	
Swatara, New York, N. Y.	29.97	761.2			61	16.1	88	NNE			2		10		N&E					Misty	
Tennessee, Yokohama, Japan	29.81	757.2	69	20.6	65	18.3	89	NE	5	2.2			9		Calm	0	0	Long	E	Hazy	
Trenton, Villefranche, France	30.29†	769.4†	67	19.4	65	18.3	53	SE	7.2	3.2			1		S&E	0	0			D. clouds	
Vandalia, Villefranche, France	30.30	769.6	66	18.9	65	18.3	44	ESE			1		2		Calm					D. clouds	
Wabash, Boston, Mass.	30.01	762.2	54	12.2	47	8.3	100	NNE	7	3.1			10		Calm	0.39	9.9			Raining	
Wyoming, Washington, D. C.	30.20†	767.1†	70	21.1	67	19.4		S&W			2		9							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ———, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.11*	764.8*	76	24.4	51	Calm			0		4			Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic,																			Capt. John Metcalf.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, Yokohama, Japan.			29.41	747.0	59	15.0	82	NNE			4		7		N	Moderate to Smooth	N&SE	D. clouds	Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 39° 26′, W. 65° 5′	N72E	10.0	30.07	763.8	63.5	17.5	92	SW			4		7c		SW	Smooth		D. clouds	Capt. K. Undütsch.
S. S. Nürnberg, N. 47° 36′, W. 40° 36′			29.50	749.3	57.0	13.9	81	WNW			7		k		NW	Heavy	WNW	Raining	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 40′, W. 24° 12′			29.64*	752.8*	59	15.0	100	SSW			6		8		SW	Moderate.	WNW	Cloudy	Captain Sargent.
S. S. Ohio, N. 40° 51′, W. 68° 00′			29.94	760.5	58.5	14.7	94	WSW			2		10			Small	SW	Foggy	Captain Morrison.
S. S. Pennsylvania, N 50° 59′ W. 16° 42′			29.64†	752.8†	60	15.6	100	SSE			4		Fog		SW	Moderate	WSW	Thick	Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 34° 07′, W. 76° 05′			30.06	763.5	76	24.4	64	Calm	0	0		2c	1k	Calm		Smooth		Clear	Capt. James Jorgensen.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

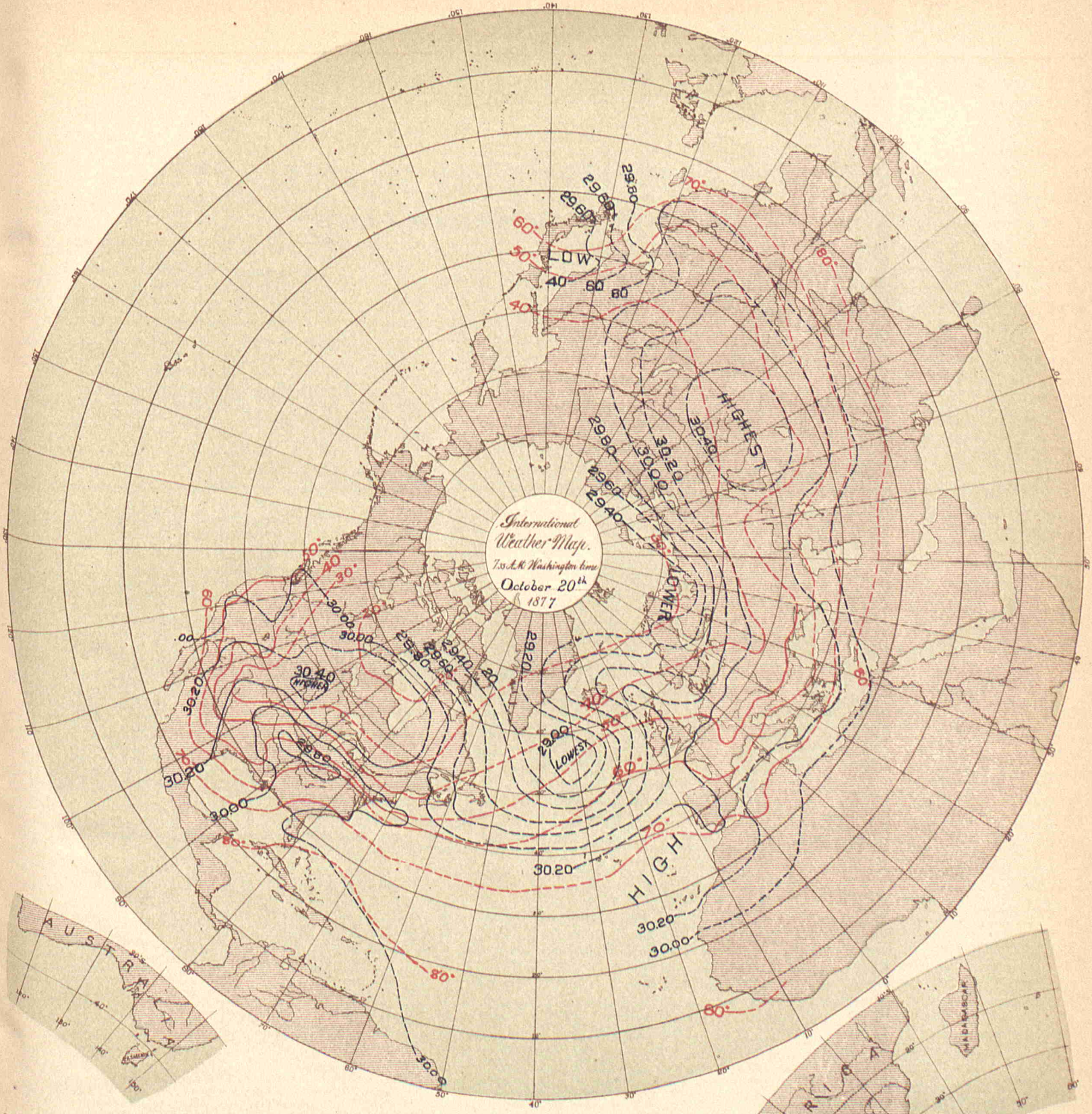
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 21, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS, mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.26	768.7	71.2	21.8	73	NW	.....	.....	2	.....	1	.....	.....	0	0	Very fair.	Michel.
Algiers	.....	.....	30.21	767.3	66.9	19.4	73	N	.....	.....	1	.....	0	.....	.....	0.437	11.1	Clear	Peter.
La Calle	.....	.....	30.23	767.8	64.2	17.9	82	SW	.....	.....	2	.....	7	.....	.....	0.157	4.0	Very cloudy	Fleury.
Tunis	.....	.....	30.23	767.7	69.4	20.8	68	Calm	.....	.....	0	.....	0	.....	.....	0.213	5.4	Covered	Jacques.
Sfax	.....	.....	30.22	767.5	69.8	21.0	.....	ENE	.....	.....	3	.....	9	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	30.26	768.7	60.8	16.0	52	N	.....	.....	2	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.21	767.2	.....	.....	.....	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Bourgeois
Geriville	.....	.....	30.21	767.3	59.4	15.2	56	N	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Lemaillot.
Laghouat	.....	.....	30.13	765.4	69.8	21.0	41	W	.....	.....	2	.....	2	.....	.....	0	0	Fair	François.
Biskra	.....	.....	30.25	768.3	77.2	25.1	35	Calm	.....	.....	0	.....	4	.....	.....	0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the Amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.80	756.8	30.35	771.0	53.1	11.7	48	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Prof. Ivan Slozir
Cracow, I. R. Observatory	29.48	748.7	30.26	768.6	50.4	10.2	46	W	.....	.....	3	.....	9	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	29.37	746.0	30.26	768.7	49.3	9.6	45	S	.....	.....	4	.....	9s	.....	Calm	0	0	.....	Julius Mikolik.
Gratz	29.07	738.3	30.35	770.8	50.0	10.0	51	SSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.90	734.0	30.36	771.1	47.1	8.4	38	NNW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.91?	734.2?	30.27?	768.9?	47.8	8.8	71	ENE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.17	740.9	30.18	766.5	46.6	8.1	64	NW	.....	.....	3	.....	9	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.19	766.9	30.31	769.8	57.2	14.0	48	WNW	.....	.....	3	.....	0	.....	.....	0	0	.....	I.R. Hydrographic Office.
Szathmar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Johann Tamas, S. J.
Szegedin	30.07	763.7	30.35	771.0	50.7	10.4	58	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.20	767.0	30.30	769.6	56.5	13.6	62	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.59	751.6	30.29	769.3	57.0	13.9	42	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.68	728.5	30.20	767.1	52.3	11.3	52	SSW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.00	759.4	30.15	764.5	55.4	13.0	63	SW	.....	.....	3	8	.....	NW	.....	0.112	2.85	.....	Royal Observatory.
Furnes	30.05	763.2	30.07	763.8	56.8	13.8	68	SW	.....	.....	4	.....	10	.....	.....	0.012	0.3	.....	M. E. de Cae.
Maeseyck	30.00	762.1	30.18	765.4	56.1	13.4	59	SSW	.....	.....	4	.....	3	.....	.....	0.016	0.4	.....	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.37	746.0	29.46	748.3	49.9	9.9		SSE	23	10.3			10			0.110	2.79	Raining	W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			29.40	746.7	58.9	14.9		SSW	18	8.0									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.63	752.6	55.9	13.3		SE	21	9.4			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.45	748.0	60.1	15.6		SW			1		7					D. clouds	J. Dreyer.
Bradford, Yorkshire																0.32	8.1		J. McLandsborough.
Bridgetown, (Barbados)	29.86	758.4	29.89	759.2	85	29.4		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.86	758.4	55.0	12.8		S			2		10					Overcast	H. Todd. [H.C.
Cardington			29.86	758.4	55.4	13.0		S			3		10					Overcast	John McLaren.
Chatham, School M. E.	29.81	757.2	29.94	760.5	55.2	12.9		S			5		10					Showery	Lt.Col. C.M.Martin, R.E.
Dartmoor	28.44	722.4	29.92	760.0	51.0	10.6		SW			5		10					Rain and fog	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.38	746.2	29.41	747.0	58	14.4		SSW			4		10					Overcast	J. Mac Gowan.
Dover	29.96	761.0	29.98	761.5	55	12.8		SSW			4		7					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.67	753.6	54.6	12.6		S	8.6	3.5			10					Squally	Thomas Mackereth.
Falmouth, Observatory	29.49	749.0	29.72	754.9	57.5	14.2		S			6		10					Raining	The Staff.
Fort Napier, (Natal)	27.41	696.2	29.58	751.3	91.4	33.0		NW			4		0					Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.90	759.4	79	26.1		Calm			0		4					D. clouds	
Galway, Queen's College					60	15.6		W			8		7					D. clouds	S. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.16	766.1	30.20	767.1	74.3	23.5		E			6		9					Overcast	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.20	741.7	29.40	746.7	57.1	13.9		SSW			3		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.90	759.4	29.91	759.7	54	12.2		SSW			4		6					Gloomy	G. T. Watson.
Greenwich, Royal Obs'y	29.75	755.6	29.93	760.2	54.7	12.6		SW			2		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.69	754.1	29.91	759.7	55.5	13.1		SSW			5		10					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.74	755.4	58	14.4		SW			7		10n			0.60	15.2	Raining	M. P. Moyle.
Holyhead	29.49	749.0	29.48?	748.8?	57	13.9		SSW			6		10					Raining	John Tilston.
Jersey	29.69	754.1	29.98	761.5	53.5	11.9		S			6		10			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			29.91	759.7	54.8	12.7		SSW	13	5.8			10					Hazy	The Staff.
Kingstown	29.47	748.5	29.50	749.3	59	15.0		SW			3		6					D. clouds	George Mitchell.
Leicester, Museum			29.76	755.9	55.8	13.2		S			3		10					Gloomy	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.01	762.2	30.08	764.0	65.4	18.6		NE			2		6					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.19	741.4	29.28	743.7	57	13.9		Calm			0		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			29.98	761.5	79.0	26.1		SE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.59	751.6	29.78	756.4	55.3	12.9		S			3		10k;d		SW	0.120	3.20	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.22	742.2	29.74	755.4	54.2	12.3		S			6		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.86	758.4	55	12.8		S			1		10					Gloomy	F. Lucas
Plymouth	29.72	754.9	29.79	756.7	57.5	14.2		S			5		10					Raining	John Merrifield.
Roche's Point	29.43	747.5	29.48	748.8	57	13.9		SW			5		5					¾ clouded	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			29.37	746.0	49.5	9.7		SE	40	17.9			10					Raining	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.24	768.1	56.6	13.7		NE			2		10					Gloomy	Sergt. W. H. Lyne.
Sheffield	29.50	749.3	29.73	755.1	56.1	13.4		SW			4		10			0.12	3.0	Gloomy	W. F. Cooper.
Silloth Rectory	29.46	748.3	29.49	749.0	58.1	14.5	84	SW			8		10			0.180	4.57	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					53.2	11.8		S			5		10					Gloomy	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.12	739.6	55	12.8		SSW			7		8					D. clouds	John Smith.
Stratfield Turgiss	29.68	753.9	29.90	759.4	56.3	13.5		S			2		10					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.35	745.5	51	10.6		SSE			5		10					Raining	John Trotter.
Truro, Royal Institution			29.80	756.9	59	15.0		S			6		10					Raining	W. Newcombe.
Valencia, Observatory			29.51	749.5	58.6	14.8		SW	40	17.9			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		S			8		10			0.10	2.5		Henry Mercer.
Cape Good Hope, Obs'y	29.90	759.4	29.94	760.5	67.0	19.4	57	WNW	23	10.3		8	6						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.34	770.6	45.0	7.2	86	SW			3		7k			0.18	4.6	Hazy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.45	748.0	59.0	15.0		SW			5		10ks			0	0	Overcast	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.10	764.5	77.0	25.0	66	ENE	14.0	6.3		0	2		ENE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.42	772.7	30.51	774.9	50.8	10.4	60	S	19	8.5			8			0.01	0.3	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.10	739.1	54	12.2		SSE			7		10			0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			29.72	754.9	42	5.6		SSE			7	10	10	SSE		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria				Capt. W. Watson.
S. S. Batavia, N. 49° 55′, W. 23° 35′			Showery	Capt. J. E. Mouland.
Ship Camperdown				Capt. A. T. Miller.
Brig Catherine, N. 43° 30′, W. 48° 35′			D. clouds	Capt. Adam Smith.
Barque Celeste				Capt. D. F. McKechnie.
S. S. Hibernia				Capt. W. R. Cato
Barque Maroon				Capt. A. T. Brown.
Ship Mikado				Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 34° 6′	7	NW	D. clouds	Capt. H. Manning.
Barque Sorata				Capt. Jas. J. Price.
Schooner Traveller, N. 51° 18′, W. 9° 5′	6	Confused	Hazy	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.21	665.7			69.4	20.8	92	NE			1	1ck	9s:d		E				Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.05	763.3	30.10	764.5	43.2	6.2	88	SE			2		10						
Fanöe	30.00	761.9	30.02	762.4	46.2	7.9	98	SSE			4		10						
Godthaab, (Greenland)	29.00	736.5	29.04	737.6	33.6	0.9	98	Calm			0		10						Foggy
Stykkisholm, (Iceland)	29.26	743.1	29.30	744.2	43.7	6.5	98	SE			6		8						
Thorshavn, (Faröe)	29.37	746.0	29.41	746.9	45.9	7.7	96	ESE			6		10						Raining
Vestervig	29.74	755.3	29.91	759.6	43.5	6.4	91	E			2		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.61	752.0	30.16	766.0	51.8	11	78	SW			1		10		N	0	0	Covered	Collignon, Director.
Amiens, Normal School	29.95	760.6	30.06	763.4	59.4	15.2	68	SW			2		0			0	0	Clear.	Bonvarne, Director.
Avignon, Normal School	30.16	766.1	30.24	768.1	64.2	17.9	50	NNW			1		0			0	0	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.64	752.8	30.21	767.2	59.7	15.4	35	SW			2		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	29.90	759.4	30.07	763.6	62.2	16.8	49	S	4.5	2.0					S	0	0		Albert Cheux.
Beauvais	29.83	757.6	30.11	764.9	55.9	13.3	56	S			1		8			0	0	Very cloudy	Normal School.
Besançon	29.36	745.7	30.26	768.6	53.6	12	57	S			2		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.37	746.1	30.30	769.7	61.0	16.1	42	S			6	5c		S		0	0	Cloudy	Normal School.
Bourges, Normal School	29.55	750.6	30.10	764.5	56.8	13.8	60	SE			2		2		NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.2	29.84	757.8	58.8	14.9	86	SW			5		10		SW	0.039	1.00	Foggy	The Staff.
Carcassonne, Normal School	29.81	757.2	30.29	767.7	60.8	16	69	E			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.94	760.5	30.02	762.4	56.7	13.7	73	NW			1		10		N	0.012	0.3	Covered	Normal School.
Chartres, Normal School	29.48	748.8	30.04	763.0	63 3	17.4	68	SW			3		1		SW	0	0	Clear.	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.84	757.9	30.17	766.2	60.8	16.0	59	SE			1	5c		SE		0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.86	733.0	30.19	766.9	64.4	18.0	34	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.31	744.4	30.20	767.0	50.4	10.2	62	E			2		0			0	0	Very clear	Dr. Goulet, Director.
Commune de Gréasque*	29.18	741.2	30.32	770.2	51.6	10.9	35	SE			1		2		SW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.85	758.2	30.07	763.6	58.6	14.8	66	E			2		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.77	756.2	30.08	764.1	56.1	13.4	71	SSW			2		8		SW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.29	744.0	30.21	767.4	57.7	14.3	55	SW			1		0			0	0	Clear	Pin, Director.
Lorient, Naval Observatory	29.90	759.4	30.00	761.9	60.8	16.0	79	S			5		10			0.118	3.0	Covered	T. Carré, Director.
Mâcon, Normal School	29.51	749.6	30.17	766.4	50.9	10.5	68	S			4		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.24	742.7	30.30	769.6	52.3	11.3	59	NW			1		2		NE	0	0	Slightly cl'dy	Normal School
Nismes, Normal School	30.07	763.7	30.27	768.8	59.4	15.2	78	S			1		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.74	755.3	30.12	765.0	57.2	14	48	NE			2		2		E	0	0	Slightly cl'dy	Bernard, Director.
Paris, Observatory	29.87	758.7	30.11	764.9	57.9	14.4	43	S			1	5c				0	0	Solar halo	National Observatory.
Privas	29.23	742.4	30.31	769.8	53.6	12	60	NE			2				NNE	0	0	Hazy	Normal School
Rochefort, Naval Obs'y	30.05	763.3	30.08	764.1	62.2	16.8	66	ESE			2		10		SE	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.98	761.6	30.07	763.8	56.8	13.8	60	E			2		10			0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	28.95	735.2	30.03	762.8	54.5	12.5	76	NW			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.50	749.3	30.25	768.3	63.1	17.3	64	SE			4		5		Calm	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.4	29.81	757.1	80.6	27										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.27	768.8	65.5	18.6	61	WSW			1–2		1			0	0		The Staff.
Mont-Louis	25.02	635.6	30.34	770.6	47.3	8.5	56	SSW	28.0	12.50			1		SSW	0.008	0.2		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.83	757.7	30.11	764.7	60.3	15.7	38	S			2		10			0	0		Marié Davy, Director.
Perpignan			30.24	768.0	59.7	15.4	71	SE	24.2	10.83			2		S	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.37	542.7			41.0	5.0		SW			1		4					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.65	575.3			47.1	8.4		SW			1		4			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.95	760.6	30.11	764.8	61.9	16.6	36	S			2	1c		WNW		0	0		E. Renou.
Toulouse, Observatory	29.48	748.8	30.21	767.3	60.3	15.7	63	SE			6		1			0	0		The Staff.
Tours	29.90	759.5	30.10	764.5	59.7	15.4	58	S			1		10			0	0	Covered	C. Marquet.
Versailles, (near Paris)			30.11	764.9	60.4	15.8	44	SW			2		10			0	0	Lightly cov.	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.06	763.5	30.08	764.1	52.7	11.5	76	SW	2.0	0.9		7ck		W		0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.97	761.2	30.14	765.5	51.1	10.6	69	SW			1		9			0.036	0.91		Prof. Arndt.
Breslau	29.70	754.4	30.24	768.0	52.3	11.3	68	W			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.78	756.4	30.21	767.4	53.1	11.7	54	SSE			1		0			0	0		Albert Senz.
Cassel	29.61	752.1	30.22	767.6	53.6	12.0	51	SW			3		2	SSW		0	0		Dr. H. Möhl.
Crefeld	29.97	761.1	30.13	765.2	58.6	14.8	48	S			4		7k			0	0		Director Lose.
Emden	30.07	763.6	30.10	764.5	50.0	10.0	76	SSW			2		10			0	0		Prof. Prestel.
Frankfort on the Main	29.92	759.9	30.29	769.3	52.2	11.2	36	SW			2		3			0	0		Physical Society.
Friedrichshafen	28.83	732.3	30.32	770.0	42.4	5.8	85	SW					0			0	0	Foggy	M. Wilhelm.
Hamburg	30.06	763.4	30.13	765.2	50.0	10.0	74	SW			2		10			0.035	0.9	Light rain	Captain F. Hegemann.
Kiel	30.07	763.7	30.08	764.1	47.8	8.8	97	SW			3		10			0.024	0.61		Prof. G. Karsten.
Königsberg, (Prussia)	29.98	761.5	30.06	763.5	45.0	7.2	49	NW										Clear	Prof. E. Luther.
Köslin			30.11	764.9	44.8	7.1		Calm			0		4			0	0		H. Müller.
Leipsic, Observatory	29.82	757.5	30.24	768.2	57.4	14.1	38	SW			3		7	W		0	0		Prof. Bruhns.
Memel, Naval School	30.00	762.0	30.05	763.2	43.5	6.4	50	NW			2		4ck					Squally	Reinbrechtvon Skalweit.
Neufahrwasser	30.12	765.0	30.13	765.4	44.6	7.0	57	NNE			3		2			0.035	0.9		A. Lothes.
Posen	29.90	759.4	30.19	766.8	50.7	10.4	76	NW			5		8			0	0	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.69	754.2	30.25	768.4	52.2	11.2	56	Calm			0		2			0	0		Dr. Schur.
Stuttgart	29.28	743.6	30.22	767.6	55.4	13.0	50	W			1		0			0	0		Prof. Schoder.
Treves, (Trier)	29.57	751.0	30.09	764.3	52.3	11.3	58	SW			4		2			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.72	729.6	30.23	767.8	56.7	13.7	33	WSW			1		1c			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.13	765.3	30.17	766.3	49.3	9.6	93	SW			2		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt. Director of the Royal Observatory at Athens.

Athens	29.83	757.7	30.22	767.6	61.2	16.2		NE			Strong							⅜Cloudy	D. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.88	759.0	29.93	760.3	82.1	27.8	43	WSW	21.0?	9.4?			0			0	0	Blue sky	
Deesa	29.44	747.7	29.92	759.8	83.3	28.5	29	N					0			0	0	Blue sky	
Bombay	29.82	757.3	29.85	758.3	84.9	29.4	69	NW	10.0	4.5			8	WSW	W	0	0	Misty	
Poona	27.84	707.2	29.86	758.3	75.9	24.4	80	SW					10		S	0.10	2.5	Thunder; lightn'g	
Lahore	29.16	740.7	29.92	759.9	73.8	23.2	43	Calm	0.8	0.4			0			0	0		
Belgaum	27.37	695.1	29.92	759.9	74.2	23.4	86	W	3.0	1.3			10			0.08	2.0	Gloomy	
Bangalore																			
Roorkee	28.97	735.9	29.88	758.9	76.8	24.9	29	NW	2.4	1.1						0	0		
Agra	29.32	744.8	29.89	759.2	79.2	26.2	40	W								0	0		
Trichinopoly																			
Nagpur	28.86	732.9	29.91	759.8	74.3	23.5	78	NW	3.5	1.6			9					Threatening	
Madras																			
Lucknow	29.50	749.3	29.87	758.8	79.3	26.3	37	Calm	3.2	1.4			3	N		0	0	D. clouds	
Allahabad	29.54	750.4	29.86	758.4	78.1	25.6	48	Calm	1.3	0.6			2			0	0	D. clouds	
Patna	29.66	753.3	29.84	757.8	86.6	30.3	26	W	1.2	0.5			8	SW	SW	0	0	D. clouds	
Hazaribagh	27.87	707.9	29.90	759.5	74.6	23.7	57	W	5.8	2.6			10		SW	0	0		
Cuttack	29.79	756.6	29.87	758.6	87.6	30.9	60	E	1.2	0.5			8			0	0	Thunder	
Calcutta (Alipore)	29.86	758.4	29.88	758.9	82.9	28.3	82	WSW	1.0	0.4			1			0	0	D. clouds	
Goalpara	29.43	747.5	29.82	757.4	78.2	25.7	58	Calm	1.8	0.8			3			0.44	11.2	D. clouds	
Chittagong	29.80	757.0	29.90	759.3	80.9	27.2	74	NW	0.8	0.4			0			0	0	Blue sky	
Sibsagar	29.54	750.3	29.88	758.9	73.6	23.1	94	ENE	1.7	0.8			10	W	W	0.15	3.8	Gloomy	
Rangoon																			
Jubbulpore	28.51	724.2	29.88	759.0	79.0	26.1	70	NE	1.6	0.7			9	NW	NE	0	0	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.40	569.0	30.28	769.1	33.8	1.0	56	W			1		0			0	0		Ab. Dom. Mongini.
Stelvio	22.38	568.4	30.31	769.9	33.1	0.6		WSW			2		0			0	0		Signor Ernesta Manfredi.
Udine	29.89	759.1	30.30	769.7	58.6	14.8	24	SW	0.7	0.3			0			0	0		Prof. Giovanni Clodig.
Padua	30.21	767.2	30.32	770.0	55.8	13.2	34	SE	1.3	0.6			0			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.12	765.1	30.32	770.1	58.1	14.5	32	S	0	0			0			0	0		Conte Alm. Da Schio.
Verona	30.11	764.7	30.33	770.4	62.2	16.8	59	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.99	736.3	30.32	770.0	55.4	13.0	48	SW			2		0			0	0		Prof. Trionfini Carlo.
Domodossola	29.28	743.7	30.32	770.2	54.1	12.3	59	S			2		0			0	0		Prof. Giuseppe Calza
Milan	29.83	757.7	30.36	771.2	56.5	13.6		NW			2		0			0	0		Ab. Gio. Capelli.
Pavia	29.98	761.6	30.34	770.5	54.0	12.2	52	NE			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.43	747.6	30.36	771.1	54.0	12.2	52	NNW	0.7	0.3			1			0	0		Prof. P. F. Denza.
Mondovi	28.39	721.2	30.33	770.3	51.8	11.0	41	NNW			4		1			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.09	764.3	30.32	770.0	62.8	17.1	39	E			2		0			0	0		Prof. L. Vassallo.
Genoa	30.12	765.1	30.29	769.4	62.6	17.0	28	N	4.9	2.2			0			0	0		Prof. G. M. Garibaldi
Piacenza	30.10	764.6	30.36	771.2	55.9	13.3	38	S	1.3	0.6			0			0	0		Dott. G. Manzi.
Parma	30.02	762.4	30.35	771.0	57.2	14.0	35	NW			2		0			0	0		Prof. P. Pigorini.
Florence	29.27	743.4	30.32	770.0	61.2	16.2	34	E			2		0			0	0		Cav. F. Meucci.
Leghorn	30.20	767.1	30.29	769.3	63.3	17.4	17	ENE	6.9	3.1			0			0	0		Prof. P. Monte.
Siena	29.06	738.1	30.32	770.0	59.0	15.0	38	E	0.7	0.3			0			0	0		Prof. L. Toscani.
Urbino	28.78	730.9	30.35	770.9	50.4	10.2	61	NE			2		2			0	0		Prof. P. Serpieri.
Pesaro	30.32	770.0	30.37	771.3	54.3	12.4	53	N	32.2	14.4			0			0	0		Prof. Luigi Guidi.
Ancona	30.23	767.9	30.34	770.6	58.6	14.8	45	NW			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.21	767.4	30.33	770.3	66.2	19.0	36	WNW			2		2	SE		0	0		Avv. P. Ponticelli.
Rome	30.08	764.0	30.26	768.5	65.5	18.6	55	N	1.8	0.8			0			0	0		Prof. P. A. Secchi.
Naples, O. U.	30.06	763.4	30.26	768.5	68.4	20.2	34	E			4		5	N		0	0		Prof. L. Palmieri.
Lecce					61.7	16.5	61	ENE	15.4	6.9			6			0	0		Prof. C. De Giorgi.
Cosenza	29.42	747.2	30.31	769.9	59.4	15.2	81	NE	5.6	2.5			10			0	0		Prof. F. D. Conti.
Cagliari	29.95	760.6	30.13	765.4	68.4	20.2		S			2		9	NE		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.18	766.6	30.23	767.8	61.5	16.4	80	N			2		10	NE		0.854	21.7		Prof. F. Cafiero.
Palermo	29.88	758.9	30.13	765.4	64.4	18.0	75	NE	1.8	0.8			10			0	0		Prof. G. Cacciatore.
Caltanissetta	28.19	716.1	30.13	765.3	57.9	14.4	74	E			2		8			0.047	1.2		Prof. A. Pagani.
Syracuse	30.03	762.8	30.11	764.7	64.4	18.0	71	ENE			6		10	NE		0.276	7.0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.72	754.9	30.28	769.0	63.1	17.3	53	NE	1.8	0.8			2			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the cooperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.54	750.3	29.63	752.7	60	15.6	74	NNW	6	2.7			9s			2.05	67.3		Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.14	587.8	30.19	766.8	55.2	12.9	89	NW	1.1	0.50		0	9n		NE	Inap.	Inap.	Foggy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.07	763.8	30.07	763.8	54.7	12.6		S			4					0	0		
Groningen	30.04	762.9	30.09	764.3	49.5	9.7		S			2					0	0		
Helder	29.99	761.7	29.99	761.7	52.5	11.4		S			4					0.094	2.4		
Hellevoetsluis			30.04	763.1	55.2	12.9	73	S			4								
Utrecht	30.04	762.9	30.08	764.1	55.2	12.9	54	SSW			4		2			0	0	Light cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.87	758.6	29.92	760.0	42.4	5.8	64	S	11.2	5.0			4			0.157	4.0		
Brönö	29.85	758.1	29.89	759.1	33.1	0.6	82	N	7	3			3			0	0		
Christiania	29.89	759.3	30.04	763.1	40.3	4.6	45	S	4	2			1			0	0		
Tromsö	29.49	749.0	29.53	750.1	32.4	0.2	96	SW	4	2			8			0.768	19.5		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.91	759.7	30.10	764.5	64.8	18.2	84	W	3.1	1.4			3			0	0		Dr. J. A. Sampaio
Campo Major	29.21	741.8	30.22	767.5	67.3	19.6	65	ESE	1.8	0.8			10	ESE		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.09	764.3	30.16	766.1	72.1	22.3	62	SW	6.9	3.1			8			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.84	757.9	30.19	766.9	63.9	17.7	76	SSE	2.2	1.1			10			0	0		The Staff.
Ponta Delgada, (Azores)	30.06	763.4	30.13	765.2	70.3	21.3	61	W	3.8	1.7			6			0.287	7.3		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Observer.
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.69	754.1	30.12	765.1	46.0	7.8	88	WSW	16	7			7						Astronomical Obs.
Wilna	29.53	750.0	29.96	760.9	39.0	3.9	92	W	4	2			10					Raining	Astronomical Obs.
Dorpat	29.63	752.7	29.89	759.1	36.0	2.2	58	WNW	9	4			7						Prof. Dr. Weihrauch
St. Petersburg	29.73	755.2	29.75	755.6	33.6	0.9	68	NW	13	6			6						Central Physical Obs.
Kuopio	29.32	744.7	29.65	753.2	29.5	— 1.4	92	W	7	3			10					Raining	Ch. Forsten.
Kieff	29.44	747.7	30.09	764.3	43.2	6.2	62	SW	9	4			10						Physical Cabinet.
Nikolaiev	30.31	769.8	30.38	771.6	49.3	9.6	33	SW	13	6			0						Kurdakof.
Kertch	30.38	771.6	30.40	772.1	55.8	13.2	54	N	2	1			3						Lagorio.
Moscow	29.48	748.7	30.04	763.1	37.0	2.8	66	SSW	11	5			8						Meteorological Obs.
Lugan	30.09	764.3	30.30	769.6	48.0	8.9	45	WSW	13	6			3						Meteorological Obs.
Archangel	29.60	751.7	29.61	752.2	33.4	0.8	85	S	27	12			10						Ogorodnikof.
Tiflis	28.77	730.8	30.17	766.3	65.5	18.6	64	NW	9	4			9						Physical Observatory.
Astrakhan	30.35	771.0	30.27	768.9	54.1	12.3	78	N	7	3			10						Sebastianof.
Kasan	29.87	758.7	30.15	765.8	41.5	5.3	50	Calm	0	0			8						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.01	736.8	29.97	761.1	44.4	6.9	94	SE	2	1			9						Meteorological Obs.
Nukuss	29.91	759.7	30.14	765.6	63.0	17.2	42	NW	4	2			7						
Kasaly																			Bobrof.
Tashkend	28.59	726.2	30.31	769.9	52.7	11.5	87	NW	4	2			0					Foggy	Michelson.
Barnaul	30.00	761.9	30.55	775.9	34.0	1.1	87	Calm	0	0			1						Meteorological Obs.
Yeniseisk	30.22	767.5	30.36	771.2	34.0	1.1	99	SSW	2	1			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.82	757.3	29.96	760.9	54.3	12.4	34	NW	34	15			3						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					38.7	3.7	80	E	13	6			0						

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 396.4? m., or 1,305.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.01	711.5	30.24	768.1	61.2	16.2	25	N	2.2	1.00		0	10			0	0	Covered	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.89	759.3	29.98	761.4	75.1	23.9	91	SE	1.6	0.7		0	0			1.779	45.2	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.09	764.4	30.19	766.9	72.0	22.2	56	ESE	11.9	5.3		0	10		SE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.88	759.0	82.8	28.2	86	SE				3cs	1kn	S	S	0.010	0.25	Clouds	Leonardo de Tejeda, Chief of Engineers.

Note.—The originals give the weather in general terms, as published: wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.52	749.9	29.56	750.9	31.3	—0.4		W			2		4			0	0		
Umea	29.72	754.9	29.77	756.2	35.6	2.0	51	NW			4		0			0	0		
Hernosand	29.85	758.2	29.90	759.5	40.6	4.8	30	NW			4		2			0	0		
Stockholm	29.82	757.5	30.00	762.0	36.3	2.4	55	SW			4		0			0	0		
Wisby	29.97	761.2	30.03	762.7	38.1	3.4	50	NW			6		0			0.031	0.8		
Sub-Series.																			
Upsala	29.93	760.3	30.01	762.2	37.6	3.1	51	W	7.4	3.3			0			0.008	0.21		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.84	732.4	30.27	768.9	50.9	10.5	52	N			1		1			0	0		The Observatory.
Zurich	28.63	727.2	30.28	769.2	49.1	9.5	47	W			1		0			0	0	Clear	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.3 mm; Thermometer, —1.2 cent.; Relative Humidity, —21 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.30	769.6	56.7	13.7	71		11	5.0			10		ENE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.33	770.3	62.1	16.7		E			1		2			Blank	Blank		B. Stéfanidès.
Valona			30.23	767.9	64.0	17.8		W			1		8			0	0	Very cloudy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.98	761.4	81.0	27.2	64	W			2		6c;ks		W	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.			30.03	762.7	28	— 2.2		Calm	0	0									Hon. J. Ferguson.
Brockville, Ontario			29.97	761.2	28	— 2.2	88	SW	4	1.8		2c	10s		NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.			29.99	761.7	40	4.4	84	W	3	1.3			0	SW		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.			30.01	762.2	26.0	— 3.3	100	E			1		8ks		W	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9											10s			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.																			H. A. Johnson
Esquimault, B. C.	29.86	758.4	29.91	759.7	44.3	6.8	100	Calm					10			0	0	Dense fog	W. H. Bevis.
*Father Point, Quebec			29.93	760.2	33	0.6	80	SW	26	11.6		10k	0	N		0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.97	761.2	30.04	763.0	25	— 3.9	98	NW	1	0.4		9c	0			0	0	Fair	Prof. Harrison.
*Fort Garry, Manitoba			30.04	763.0	32	0.0	95	Calm	0	0		2ck	2ks	NW	NW	0	0	Fair	James Stewart.
Goderich, Ontario	29.18	741.2	30.00	762.0	36.4	2.4	82	E			2	6ck	0	SW		0	0	Fine	H. J. Strang, M. A
Granton, Ontario	28.82	732.0	29.95	760.7	34	1.1	79	N			1		10n			0	0	Cloudy	James Grant.
*Halifax, N. S.	29.85	758.2	29.99	761.7	36	2.2	90	N	2	0.9		2cs	2ks			0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.59	751.6	29.96	761.0	41.5	5.3	73	NE			5	10cs	0	NE		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.89	759.2	29.92	760.0	35	1.7	62	NW			4		2s		NW	0.07	1.8	Cloudy	S. Woods, M. A
*Kingston, Ontario	29.67	753.6	30.05	763.3	33	0.6	89	NE	5	2.2		10cs	0	Calm		0	0	Cloudy	E. Weedon.
*Montreal, Quebec	29.81	757.2	30.02	762.5	31	— 0.6	90	Calm	0	0		8ck	Sm'e	W		0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.35	745.5	30.07	763.8	30	— 1.1	84	NE	8	3.6		2cs	2ks	SW		0.01	0.3	Fair	Rev. R. Mosley
Peterboro, Ontario	29.25	742.9	30.03	762.7	38.2	0.7	80	N			1		10ks			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.22	742.2	29.92	760.0	40	4.4	82	N	13	5.8		10k	0	SW		0.01	0.3	Cloudy	H. Morgan.
Port Hastings, N. S.																			Peter Grant.
Port Stanley, Ontario	29.24	742.7	29.90	759.4	40	4.4	72	N	14	6.3		8k	0	NW		0.02	0.5	Cloudy	M. Payne.
*Quebec, Quebec	29.67	753.6	30.00	762.0	32	0.0	72	Calm	0	0		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.61	752.1	30.10	764.5	25	— 3.9	88	W	3	1.3		5cs	0	NW		0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.88	758.9	30.05	763.3	30	— 1.1	89	N	1	0.4		4ck	0			0	0		G. Murdock, C. E.
*Saugeen, Ontario	29.28	743.7	30.01	762.2	34	1.1	80	Calm	0	0			10k		S	0	0	Cloudy	K. Stewart.
Stayner, Ontario																			R. J. Cole.
Stratford, Ontario	28.64	727.4	29.97	761.2	33.7	0.9	77	E	6	2.7			10s			0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.98	761.5	30.01	762.2	40	4.4	71	SW	5	2.2		8k	0	W		Inap.	Inap.	Fair	T. C. Hill.
*Toronto, Ontario	29.60	751.8	30.00	762.0	36	2.2	64	NE	12	5.4			10ks		E	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.	29.91	759.7	30.01	762.2	37.5	3.1	86	Calm	0	0		7k	0			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					39.0	3.9	70	NE				5k	10s			0.05	1.3	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.71	754.6	29.94	760.5	40	4.4	83	NW	4	1.8			10s		Calm	0.63	16.0	Cloudy	
Alpena, Michigan	29.39	746.5	30.06	763.5	35	1.7	80	NE	4	1.8		0	5s		NE	0.03	0.8	Fair	
Atlantic City, New Jersey	29.76	755.9	29.78	756.4	61	16.1	100	N	6	2.7			10s		N	0.68	17.3	Cloudy	
Augusta, Georgia	29.64	752.8	29.82	757.4	66	18.9	84	W	4	1.8		0	5ks		SW	0.02	0.5	Fair	
Baltimore, Maryland	29.75	755.6	29.80	756.9	59	15.0	87	NE	5	2.2			10s		NE	0.17	4.3	Threatening	
Barnegat, New Jersey	29.78	756.4	29.80	756.9	58	14.4	93	NE	20	8.9			10n		NE	1.11	28.2	Light rain	
Bismarck, Dakota	28.23	717.0	29.94	760.5	33	0.6	89	SE	4	1.8		0	1s		Calm	0	0	Clear	
Boise City, Idaho	27.13	689.1	29.74	755.4	45	7.2	53	Calm	0	0		5ck	0	Calm		0	0	Fair	
Boston, Massachusetts	29.81	757.2	29.97	761.2	44	6.7	75	NE	7	3.1			10n		NE	0.63	16.0	Light rain	
Brackettville, Texas	29.04	737.6	30.10	764.5	39	3.9	71	NW	2	0.9		0	0			0	0	Clear	
Breckenridge, Minnesota	29.05	737.6	30.09	764.3	31	— 0.6	79	SW	3	1.3		1cs	0	Calm		0	0	Clear	
Brownsville, Texas	30.10	764.5	30.17	766.3	60	15.6	81	NE	3	1.3		10ck	0	W		0	0	Cloudy	
Buffalo, New York	29.16	740.7	29.87	758.7	41.0	5.0	91	NE	13	5.8			10s		NE	0.05	1.3	Cloudy	
Burlington, Vermont	29.77	756.1	30.03	762.7	45	7.2	54	N	4	1.8		8c	0	Calm		0	0	Fair	
Cairo, Illinois	29.46	748.3	29.85	758.2	54	12.2	86	NW	11	4.9			10n		NW	0.26	6.6	Light rain	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.85	682.0	30.34	770.6	41	5.0	64	W				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.76	755.9	29.76	755.9	71	21.7	90	S	6	2.7			10n		SW	0.43	10.9	Light rain	
Cape Henry, Virginia	29.76	755.9	29.79	756.7	68	20.0	94	SW	6	2.7		2ck	0	SW		0.03	0.8	Fair	
Cape Lookout, N. Carolina	29.79	756.7	29.80	756.9	73	22.8	90	SW	15	6.7			10s		SW	0.16	4.1	Cloudy	
Cape May, New Jersey	29.74	755.4	29.77	756.1	64	17.8	94	W	10	4.5			10s		Calm	0.72	18.3	Cloudy	
Charleston, South Carolina	29.78	756.4	29.84	757.9	73	22.8	85	SW	8	3.6			10s		SW	0.01	0.3	Cloudy	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	29	— 1.7	77	W	2	0.9		0	0			0	0	Clear	
Chicago, Illinois	29.21	741.9	29.90	759.4	45	7.2	76	NE	14	6.3			10s		NE	0.08	2.0	Cloudy	
Cincinnati, Ohio	29.06	738.1	29.69	754.1	54	12.2	86	NE	4	1.8			10n		Calm	0.12	3.0	Light rain	
Cleveland, Ohio	29.11	739.4	29.83	757.7	46	7.8	92	NE	8	3.6			10n		Calm	0.05	1.3	Light rain	
Concho, Texas					39	3.9	63	NW	6	2.7		0	0			0	0	Clear	
Corsicana, Texas	29.65	753.1	30.13	765.3	47	8.3	70	N	10	4.5			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.39	746.5	30.05	763.3	38	3.3	81	N	10	4.5		1cs	4s	N	N	0.04	1.0	Fair	
Denison, Texas	29.30	744.2	30.13	765.3	44	6.7	84	NW	9	4.0			10s		NW	Inap.	Inap.	Cloudy	
Denver, Colorado	24.88	631.9	30.10	764.5	27	— 2.8	77	S	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.21	741.9	29.88	758.9	42	5.6	83	NE	9	4.0			10n		NE	0.02	0.5	Light rain	
Dodge City, Kansas	27.56	700.0	29.96	761.0	31	— 0.6	79	N	12	5.4		0	2s		Calm	0.15	3.8	Clear	
Dubuque, Iowa	29.36	745.7	30.08	764.0	36	2.2	80	N	2	0.9		0	0			0	0	Clear	
Duluth, Minnesota	29.34	745.2	30.03	762.7	38	3.3	71	Calm	0	0			10s		Calm	0	0	Cloudy	
Eagle Pass, Texas	29.44	747.8	30.22	767.6	44	6.7	67	NW	2	0.9		0	0			0	0	Clear	
Eastport, Maine	29.92	760.0	29.99	761.7	38	3.3	81	NW	6	2.7		10c	0	SW		0	0	Cloudy	
Erie, Pennsylvania	29.10	739.1	29.81	757.2	45	7.2	84	NE	12	5.4			10s		NE	0.04	1.0	Cloudy	
Escanaba, Michigan	29.43	747.5	30.11	764.8	32	0.0	79	NW	4	1.8		0	0			0	0	Clear	
Florence, Arizona	28.39	721.1	29.99	761.7	65	18.3	26	E				2c	0	E		0	0	Fair	
Fort Bayard, New Mexico	24.15	613.4	30.15	765.8	37	2.8	62	SW	6	2.7		0	0			0	0	Clear	
Fort Craig, New Mexico																			
Fort Gibson, Indian Ter.	29.50	749.3	30.05	763.3	45	7.2	84	N	9	4.0			10s		N	0.04	1.0	Cloudy	
Fort Griffin, Texas	28.90	734.0	30.22	767.6	42	5.6	75	NW	6	2.7		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.93	734.8	30.09	764.3	38	3.3	81	NW	5	2.2		0	1s		W	0	0	Clear	
Fort Sully, Dakota	28.37	720.6	30.10	764.5	32	0.0	79	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	30.09	764.3	30.13	765.3	50	10.0	78	NW	17	7.6		0	1ks		NW	0	0	Clear	
Grand Haven, Michigan	29.33	745.0	30.00	762.0	34	1.1	90	NE	8	3.6		4c	2s	NE	NE	0	0	Fair	
Indianapolis, Indiana	29.02	737.1	29.78	756.4	49	9.4	85	NE	10	4.5			10s		NE	0.10	2.5	Threatening	
Indianola, Texas	30.17	766.3	30.20	767.1	52	11.1	65	NW	21	9.4		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.87	758.7	29.90	759.4	70	21.1	75	W	12	5.4		2k	0	SW		0.15	3.8	Fair	
Keokuk, Iowa	29.34	745.2	29.97	761.2	41	5.0	83	N	10	4.5			10s		Calm	0.30	7.6	Cloudy	
Key West, Florida	29.92	760.0	29.95	760.7	80.0	26.7	78	SE	2	0.9		2k	1ks	SE	Calm	0.01	0.3	Fair	
Kittyhawk, North Carolina	29.78	756.4	29.80	756.9	70	21.1	100	S	12	5.4			10s		SW	0	0	Threatening	
Knoxville, Tennessee	28.82	732.0	29.81	757.2	52	11.1	86	SW	4	1.8		0	3ks		SW	0.09	2.3	Fair	
La Crosse, Wisconsin	29.34	745.2	30.10	764.5	38	3.3	71	NE	3	1.3			10s		Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.22	666.0	30.37	771.4	38	3.3	63	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					46	7.8	76	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.22	742.2	30.10	764.5	36	2.2	80	NW	6	2.7		0	0			0.20	5.1	Clear	
Los Angeles, California	29.64	752.8	29.98	761.5	52	11.1	64	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.20	741.7	29.73	755.1	67	19.4	90	SW	4	1.8			8s		Calm	0.33	8.4	Cloudy	
Lynchburg, Virginia	29.10	739.1	29.75	755.6	65	18.3	78	SW	1	0.4			10s		W	1.40	35.6	Cloudy	
Maricopa Wells, Arizona					40	4.4	26	E				0	0			0	0	Clear	
Marquette, Michigan	29.36	745.7	30.08	764.0	35	1.7	70	W	8	3.6		0	0			0	0	Clear	
Mason, Texas	28.53	724.6	30.36	771.1	42	5.6	74	W	8	3.6		0	0			0	0	Clear	
Memphis, Tennessee	29.59	751.6	29.90	759.4	54	12.2	87	W	5	2.2			10n		W	0.01	0.3	Light rain	
Milwaukee, Wisconsin	29.34	745.2	30.04	763.0	41	5.0	64	NE	16	7.2		2cs	5s	Calm	NE	0	0	Fair	
Mobile, Alabama	29.94	760.5	29.98	761.5	55	12.8	80	W	8	3.6		0	8s		NW	0	0	Fair	
Montgomery, Alabama	29.72	754.9	29.95	760.7	55	12.8	86	W	5	2.2			10s		W	Inap.	Inap	Cloudy	
Morgantown, West Virginia	28.67	728.2	29.69	754.1	59	15.0	87	N	1	0.4			10s			0.05	1.3	Threatening	
Mt. Washington, N. H.	23.66	601.0	30.02	762.5	27	— 2.8	88	NW	16	7.2		8cs	5ks	NW	NW	0	0	Cloudy	
Nashville, Tennessee	29.32	744.7	29.85	758.2	54	12.2	86	Calm	0	0			10n		S	0.02	0.5	Light rain	
New Haven, Connecticut	29.78	756.4	29.89	759.2	44	6.7	100	NE	20	8.9			10n			1.61	40.9	Light rain	
New London, Connecticut	29.89	759.2	29.94	760.5	44	6.7	100	NE	9	4.0			10n		NE	0.90	22.9	Heavy rain	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	55	12.8	71	NW	10	4.5			10ks		NW	0	0	Cloudy	
Newport, Rhode Island	29.88	758.9	29.93	760.2	45	7.2	100	NE	6	2.7			10n		NE	0.61	15.5	Light rain	
New York, New York	29.70	754.4	29.88	758.9	47	8.3	92	N	16	7.2			10n		Calm	0.15	3.8	Light rain	
Norfolk, Virginia	29.73	755.1	29.79	756.7	68	20.0	100	S	4	1.8		4k	1k	SW	S	0.49	12.4	Fair	
North Platte, Nebraska	27.25	692.1	29.97	761.2	24	— 4.4	88	W	3	1.3		0	0			0	0	Clear	
Olympia, Washington Ter.	29.85	758.2	29.89	759.2	49	9.4	100	SW	6	2.7			Fog		SW	Inap.	Inap.	Dense fog	
Omaha, Nebraska	29.01	736.8	30.14	765.5	34	1.1	79	NW	5	2.2		2cs	0	Calm		0.07	1.8	Clear	
Oswego, New York	29.62	752.3	29.94	760.5	45	7.2	77	NE	8	3.6			10s		NE	0	0	Cloudy	
Pembina, Dakota	29.20	741.7	30.05	763.3	33	0.6	84	N	3	1.3		0	5s		Calm	0	0	Fair	
Philadelphia, Pennsylvania	29.78	756.4	29.83	757.7	50	10.0	100	NE	16	7.2			10n		NE	0.54	13.7	Light rain	
Phœnix, Arizona					49	9.4	43	Calm				2cs	0	Calm		0	0	Clear	
Pike's Peak, Colorado	17.82	452.6	30.03	762.7	11	—11.7	23	N	14	6.3		0	0			0	0	Clear	
Ploche, Nevada	24.09	611.9	29.86	758.4	39	3.9	46	SW	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	28.92	734.6	29.71	754.6	53	11.7	93	E	4	1.8			10s		Calm	0.15	3.8	Cloudy	
Port Huron, Michigan	29.24	742.7	29.91	759.7	42	5.6	65	NE	13	5.8		2cs	8ks	Calm	N	0	0	Cloudy	
Portland, Maine	29.95	760.7	30.00	762.0	44	6.7	67	NE	6	2.7			10s		Calm	0.04	1.0	Cloudy	
Portland, Oregon	29.90	759.4	30.00	762.0	51	10.6	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.88	631.9	30.24	768.1	42	5.6	56	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	81	27.2	74	S	12	5.4		8cs	0	Calm		0	0	Cloudy	
Red Bluff, California	29.59	751.6	29.94	760.5	55	12.8	87	NW	8	3.6			10s		Calm	0.26	6.6	Cloudy	
Rochester, New York	29.29	744.0	29.90	759.4	44	6.7	92	NE	6	2.7			10s		NE	0.06	1.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.40	746.7	29.96	761.0	54	12.2	86	N	2	0.9		8k	2ks	S	Calm	0	0	Cloudy	
Sacramento, California	29.86	758.4	29.94	760.5	58	14.4	93	SE	7	3.1			10n		S	0.11	2.8	Light rain	
St. Louis, Missouri	29.30	744.2	29.87	758.7	47	8.3	96	NW	14	6.3			10s		Calm	1.30	33.0	Cloudy	
St. Marks, Florida	29.94	760.5	29.96	761.0	58	14.4	93	NW	4	1.8		0	0			0.92	23.4	Clear	
St. Paul, Minnesota	29.22	742.2	30.08	764.0	35	1.7	80	W	2	0.9		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.69	652.5	30.02	762.5	41	5.0	48	SE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.49	749.0	30.09	764.3	44	6.7	84	W	3	1.3		0	0			0	0	Clear	
San Diego, California	29.94	760.5	30.01	762.2	59	15.0	87	NE	4	1.8		0	0			0	0	Clear	
Sandusky, Ohio	29.16	740.7	29.84	757.9	47	8.3	92	NE	34	15.2			10ks		NE	0.28	7.1	Threatening	
Sandy Hook, New Jersey	29.82	757.4	29.84	757.9	52	11.1	93	NE	26	11.6			10n		NE	0.37	9.4	Light rain	
San Francisco, California	29.91	759.7	29.98	761.5	57	13.9	97	W	10	4.5			10s		Calm	0.27	6.9	Cloudy	
Santa Fé, New Mexico	23.38	593.8	29.92	760.0	32.0	0.3	79	Calm	0	0		0	Haze			0	0	Clear	
Savannah, Georgia	29.76	755.9	29.85	758.2	72	22.2	90	SW	4	1.8		0	2s		SW	0.02	0.5	Clear	
Shreveport, Louisiana	29.84	757.9	30.06	763.5	49	9.4	85	W	4	1.8			10s		W	0	0	Cloudy	
Smithville, North Carolina	29.81	757.2	29.84	757.9	73	22.8	90	S	9	4.0		0	8ks		S	0.08	2.0	Cloudy	
Springfield, Massachusetts	29.76	755.9	29.89	759.2	44	6.7	92	N	3	1.3			10n		N	0.61	15.5	Light rain	
Stanwix, Arizona					45	7.2	35	NE				0	0			0	0	Clear	
Stockton, Texas	27.19	690.6	30.19	766.8	30	—1.1	78	SW	2	0.9		0	0			0	0	Clear	
Thatcher's Island, Mass	29.92	760.0	29.97	761.2	46	7.8	69	NE	12	5.4		10cs	0	W		0.31	7.9	Cloudy	
Toledo, Ohio	29.19	741.4	29.87	758.7	42	5.6	83	NE	12	5.4			10s		NE	0.11	2.8	Cloudy	
Tucson, Arizona	27.59	700.8	30.14	765.5	60	15.6	40	SW				0	2s		Calm	0	0	Fair	
Tybee Island, Georgia	29.82	757.4	29.85	758.2	73	22.8	85	SW	4	1.8		5k	0	W		Inap.	Inap.	Fair	
Umatilla, Oregon	29.59	751.6			41	5.0	83	SE	8	3.6		0	0			0	0	Clear	
Vicksburg, Mississippi	29.74	755.4	30.00	762.0	52	11.1	93	NW	8	3.6		10k	0	NW		0	0	Cloudy	
Virginia City, Montana	24.29	617.0	29.77	756.1	35	1.7	44	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.61	752.1	29.99	761.7	44	6.7	84	SE	1	0.4		2c	0	NW		0	0	Fair	
Washington, D. C.	29.68	753.9	29.78	756.4	57	13.9	100	NE	7	3.1			Fog		NE	0.13	3.3	Foggy	
Wickenburg, Arizona					40	4.4	63	SE				2c	0	Calm		0	0	Fair	
Wilmington, N. Carolina	29.75	755.6	29.82	757.4	70	21.1	90	S	4	1.8		2k	0	Calm		0.32	8.1	Fair	
Winnemucca, Nevada	25.60	650.2	29.96	761.0	36	2.2	45	NE	6	2.7		0	8s		Calm	0	0	Cloudy	
Wood's Holl, Mass	29.89	759.2	29.94	760.5	47	8.3	100	N	2	0.9			10n			0.87	22.1	Light rain	
Yankton, Dakota	28.88	733.5	30.24	768.1	29	—1.7	83	W	1	0.4		0	0			0	0	Clear	
Yuma, Arizona	29.83	757.7	30.00	762.0	58	14.4	35	NE	4	1.8		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.99	761.7	30.04	763.0	18.0	—7.8	92	W	6	2.7		3k	2s	N	N	0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.90	759.4	29.92	760.0	79	26.1	82	Calm	0	0		2c	0	SE		1.93	49.0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.12	765.0	30.13	765.3	80	26.7	80	Calm	0	0		8c	2s	SE		0	0		James Gall.
Navassa, W. I.	29.88	758.9	29.96	761.0	84.5	29.2		NE			2					0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	E	3	1.3		2c	2k	NE		0.05	1.3		G. O. Gellich.
Paramaribo, D. Guiana, S. A.																			C. J. Hering.
Batavia, Dutch Guiana, S. A.			30.02	762.5	84	28.9	75	E			2	5k	5s	E		0	0	Fair	Dr. H. Groot.
Medellin, Colombia, S. A.																			Thomas Herran.
Honolulu, Oahu, H. I.	25.23	640.8			67.0	19.4	80	Calm			0	0	1ks			0.06	1.5	Fair	Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.8 (?) m.; Fort Sully, 1,675 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard MareIsland,Cal.	29.96	761.0	60	15 6	58	14.4	100	NW	2	0.9			9n		Calm	0.13	3.3			Overcast	
Navy Yard, Pensacola, Fla.	30.07	763.8			62	16.7	77	NW	12	5.4			6		NE	0	0			D. clouds	
NavyYard,Portsmouth,N.H	30.01	762 2	60	15.6	42	5.6	83	Calm	0	0			10			0.175	4.45			Cloudy	
Naval Hospital, Yokohama, Japan	29.53	750.0	65	18 3	61	16.1	71	N			4		7k		NNE	1.28	32.5			Cloudy	
Adams. Montevideo, Uruguay	30.00	762.0	64	17.8	61	16.1	66	SE			3		0			0	0	Light	SE	Blue sky	
Alert. N. 37° 02′, E. 131° 57′	29.75†	755.6†	61	16.1	60	15.6	65	WSW			6–8		1		W			Rough	W	Squally	
Alliance, Constantinople, Turkey.	30.49	774.4	61	16.1	59	15.0	100	NNE			2		10		N&E					Overcast	
Ashuelot. Tientsin, China	29.97	761.2	65	18.3	48	8.9	49	Calm			0		5		WNW			Smooth		D. clouds	
Canonicus, New Orleans, La	30.00	762.0	45	7.2	55	12.8	80	W			3		8		NW					Cloudy	
Colorado, New York, N. Y	29.93	760.2	62	16.7	49	9.4	93	NE	14	6.3			10		NE	0.2	5.			Raining	
Despatch, Constantinople, Turkey.	30.42	772.7	74	23.3	61	16.1	71	NE			3–5		9		NE					Cloudy	
Franklin, Norfolk, Va	29.89	759.2	68	20.0	72	22.2	100	SW	6.5	2.9			1		SW	0.2	5.			Clear	
Frolic, Washington, D. C	29.88	758.9	68	20.0	60	15.6	94	NE			1		10n		Calm	Blank	Blank			D. clouds	
Gettysburg, Messina, Italy	29.99‡	761.7‡			67	19.4	??	Calm			0		10		Calm					Drizzling	
Kearsarge, N. 10° 22′, E. 58° 40′	29.89	759.2			84	28.9	91	NW			2		3		N&W	0	0	Smooth	S	D. clouds	
Lackawana, Port Townsend, W. T.	29.88	758.9			49	9.4	93	S&W			0–1		10					Smooth		Fóggy	
Marion, Smyrna, Turkey	30.10	764.5	68	20.0	68	20.0	51	NE			1		7		Calm	0	0	Smooth		D. clouds	
Michigan, Milwaukee, Mich	29.49	749.0	57	13.9	44	6.7	68	N			4		5		N					Cloudy	
Monocacy, Yokohama, Japan	29.50	749.3	64	17.8	63	17.2	100	N			4		2		N	Blank	Blank	Smooth		D. clouds	
Monongahela, N. 36° 11′, W. 16° 56′	30.18	766.6	69	20.6	69	20.6	90	NNE			3		kn					Smooth		D. clouds	
New Hampshire, Port Royal, S. C	30.04	763.0			73	22.8	85	SW	12	5.4			6		SW	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.11	764 8	64.5	18.1	61.5	16.4	94	Calm	0	0			9		SSW	0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.08†	764.0†	70	21.1	68 5	20.3	79	SE			2		8					Long	W	Hazy	
Ossipee, New York, N. Y	29.90	759.4	70	21.1	52	11.1	93	NE			3		10		NE					Misty	
Palos, Shanghai, China	30.11	764.8	60	15.6	58	14.4	64	S			1		8		S					Cloudy	
Pensacola, Mare Island, Cal	30.05	763.3			61	16.1	88	SW			0–1		10			0.13	3.3			Overcast	
Plymouth, Norfolk, Va	30.12†	765.0†	74	23.3	70	21.1	95	SSW			2		6		SSW					Unsettled	
Ranger, Shanghai, China	30.20	767.1			63	17.2	78	W			1		4		W					Clear	
Rio Bravo. Brownsville, Texas	29.94	760.5			63	17.2	83	NNW			2		8		SW					D. clouds	
Santee, Annapolis, Md	29.86	758.4	63	17.2	61	16.1	94	NE			2		9			0.44	11.2			Overcast	
St. Louis, League Island, Pa	29.80	756 9	54	12.2	52	11.1	93	NE	10	4.5			10		NE	0.49	12.4			Overcast	
Swatara, New York, N. Y	29.94	760.5			55	12 8	87	NE			3		10		N&E					Raining	
Tennessee, Yokohama, Japan	29.59	751.6	69	20.6	63	17.2	78	NNW	13	5.8			9		S&E	0.11	2.8	Light	N&E	D. clouds	
Trenton, Villefranche, France	30.31†	769.9†	67	19.4	65	18.3	63	SE	4	1.8			0			0	0			Blue sky	
Vandalia, Villefranche, France	30.33	770.4	65	18.3	66	18.9	50	SE			1		0							Blue sky	
Wabash, Boston, Mass	29.97	761.2	49	9.4	44	6.7	84	NE	5	2.2			10		Calm	0.5	13.			Raining	
Wyoming, Washington, D. C	30.12†	765.0†	69	20.6	64	17.8		NE			3		10							Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
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S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.15*	765.8*	74	23.3	90	E			2		3		SE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.																			
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S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic,																			Capt. John Metcalf.
S. S. Gaelic, N. 45° 00′, W. 179° 30′			29.12*	739.6*	50	10.0	??	W			6		k		W	High	W	Raining	Capt. W. H. Kidley.
S. S. Oceanic, N. 34° 30′, E. 189° 00′			29.60	751.8	62	16.7	83	S			6		4		swânw	Smooth		D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Androssen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig																			Capt. K. Undütsch.
S. S. Nürnberg, N. 46° 31′, W. 45° 51′			29.89	759.2	45.0	7.2	61	NW			6		8		NW	Long	wnw	Fine	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. N. 51° 10′, W. 31° 07′			29.44*	747.8*	54	12.2	74	W			6		6		WNW	Heavy	NW	Squally	Captain Sargent.
S. S. Ohio. N. 38° 55′, W. 74° 10′			29.79	756.7	66.5	19.2	97	SW			3				WSW	Small	Var.	Clear	Captain Morrison.
S. S. Pennsylvania, N. 51° 23′ W. 9° 31′			29.56†	750.8†	60	15.6	94	SW			4		5		SW	High; Irregular.		Misty	Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 34° 55′, W. 75° 00′			29.86	758.4	72	22.2	100	Calm	0	0			10n		W	Rough	S	Rainy	Capt. James Jorgensen.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

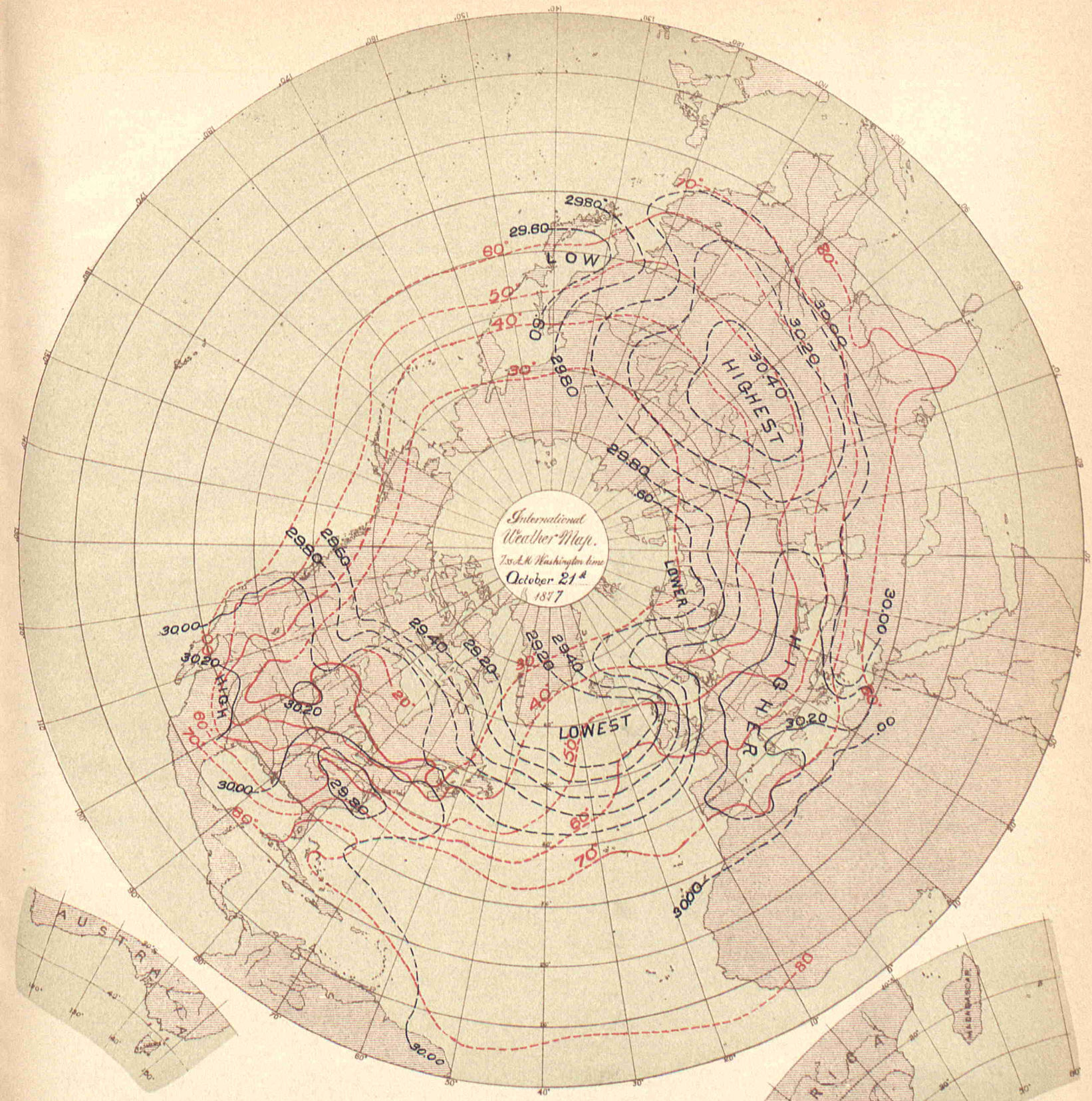
NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz. cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 22, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÈ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.24	768.2	71.2	21.8	63	NNW			1		1			0	0	Very fair	Michel.
Algiers			30.19	766.9	67.6	19.8	79	ESE			1		10			0	0	Covered	Peter.
La Calle			30.26	768.6	70.9	21.6	93	NW			1		6			0.079	2.0	Cloudy	Fleury.
Tunis			30.26	768.6	68.5	20.3	68	NE			3		2			0.134	3.4	Fair	Jacques.
Sfax			30.24	768.0	66.2	19.0		NW			2		6			0.197	5.0	Cloudy	Husson.
Saida			30.24	768.2	67.1	19.5	37	SW			1		2			0	0	Fair	Millot.
Tebessa			30.22	767.6				NW			1		9			0	0	Covered	Bourgeois.
Geriville			30.21	767.4	58.3	14.6	63	E			1		6			0	0	Cloudy	Lemaillot.
Laghouat			30.14	765.5	64.4	18.0	62	E			2		6			0	0	Cloudy	François.
Biskra			30.30	769.6	76.8	24.9	43	Calm			0		4			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.72	755.0	30.28	769.1	55.6	13.1	42	Calm			0		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.42	747.2	30.18	766.6	59.4	15.2	41	WSW			3		7			0	0		Dr. Wierzbiski.
Eperies	29.37	745.9	30.26	768.6	50.4	10.2	46	S			3		6.3s			0	0		Julius Mikolik.
Gratz	29.00	736.7	30.28	769.0	51.8	11.0	55	S			1		0			0	0		Andreas Rospini.
Hermannstadt	28.87	733.4	30.32	770.1	51.4	10.8	37	NNW			1		0			0	0		Prof. Reissenberger.
Kremsmünster	28.85	732.8	30.21	767.3	49.1	9.5	86	Calm			0		7			0	0		Prof. C. Wagner.
Lemberg	29.21	741.9	30.21	767.2	52.7	11.5	63	SW			2		8			0	0		Dr. T. Stanecki.
Pola	30.13	765.2	30.24	768.1	59.4	15.2	51	WNW			2		1c			0	0		I.R. Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	30.03	762.7	30.31	769.9	54.7	12.6	50	SE			1		0			0	0		Karl Stancel.
Trieste	30.18	766.6	30.28	769.2	58.3	14.6	76	Calm			0		0			0	0	Clear	P. Busin.
Vienna	29.53	750.1	30.23	767.9	55.0	12.8	47	S			1		1			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.56	725.5	30.07	763.7	55.6	13.1	77	WSW			3		9			0.685	17.4		Prof. M. Passau.
Brussels	29.76	756.0	29.96	761.0	57.7	14.3	72	SW			5	6	4	WSW	SW	0.030	0.75	Solar halo	Royal Observatory.
Furnes																			M. E. de Cae.
Maeseyck	29.85	758.1	29.98	761.4	52.2	11.2	87	SW			6		8			0.031	0.8		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.20	741.7	29.30	744.2	52.0	11.1		S	10	4.5			7			0.020	0.51	D. clouds	W. Boswell.
Ardrossan	29.31	744.5	29.33	745.0	57	13.9		SW			3		5					D. clouds	William McNeil.
Armagh, Observatory			29.41	747.0	55.8	13.2		SW	14	6.3			7					Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.50	749.3	50.8	10.4		W	22	9.8			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			29.94	760.5	53.7	12.1		WSW			3		9					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.07	738.4	29.47	748.5	54.7	12.6		SW			3		10			0.34	8.6	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	80	26.7		NE			1		4					D. clouds	Pvt. G. W. Roberts, A
Cambridge, Observatory			29.72	754.9	61.0	16.1		SW			2		10			Blank	Blank	Overcast	H. Todd. [H. C.
Cardington			29.70	754.4	60.4	15.8		SW			4		9					Overcast	John McLaren.
Chatham, School M. E	29.68	753.9	29.81	757.2	59.2	15.1		W			4		9					Showery	Lt. Col. C. M. Martin, R. E.
Dartmoor	28.30	718 8	29.77	756.1	52.2	11.2		SW			6		10					Rain & fog	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.37	746.0	29.40	746.7	51	10.6		WSW			4		10					Raining	J. Mac Gowan.
Dover	29.82	757.4	29 85	758.2	57	13.9		SW			5		5					½ clouded	J. Costello.
Eccles, (near Manchester)			29.51	749.5	55.6	13.1		S	3.6	1.6			10					Drizzling	Thomas Mackereth.
Falmouth, Observatory	29.50	749.3	29.72	754.9	57.5	14.2		SSW			6		10					Raining	The Staff.
Fort Napier, (Natal)	27.59	700.8	29.82	757.4	63.8	17.7		E			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.94	760.5	81	27.2		Calm			0		5					D. clouds	
Galway, Queen's College					59	15.0		WSW			8		3					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.18	766.6	30.22	767.6	69.6	20.9		NE			2		6					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.12	739.6	29.32	744.7	55.9	13.3		SSW			5		6					D. clouds	D. G. Maclean.
Great Yarmouth	29.76	755.9	29.76	755.9	60	15.6		SW			4		4					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.62	752.3	29.78	756.4	59.8	15.4		SW			4		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.66	753.4	29.87	758.7	60	15.6		SSW			4		8					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			29.28	743.7	59	15.0		S			6		10n			0.11	2.8	Raining	M. P. Moyle.
Holyhead	29.47	748.5	29.52	749.8	53	11.7		WSW			5		3					D. clouds	John Tilston.
Jersey	29.64	752.8	29.93	760.2	60.5	15.8		SW			5		4			Blank	Blank	Blue sky	J. Fisher.
Kew, Observatory			29.78	756.4	60.0	15.6		SW	27	12.1			10kd					Raining	The Staff.
Kingstown	29.47	748.5	29.50	749.3	55	12.8		W			5		6					D. clouds	George Mitchell.
Leicester, Museum			29.61	752.1	58.2	14.6		SW			5		10					Gloomy	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.04	763.0	30.11	764.8	66.6	19.2		NE			2		8					Overcast	Sergt. Fred Travis, A. H. C.
Nairn	29.13	739.9	29.22	742.2	53	11.7		W			2		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.97	761.2	81.8	27.7		W			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.42	747.3	29.60	751.8	58.7	14.8		S			6		10d		SSW	0.223	5.67	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.08	738.6	29.59	751.6	57.0	13.9		SSW			6		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.70	754.4	59	15.0		SW			4		10					Gloomy	F. Lucas
Plymouth	29.67	753.6	29.75	755.6	57.6	14.2		SW			5		10					Threatening	John Merrifield.
Roche's Point	29.56	750.8	29.61	752.1	52	11.1		W			4		5			Blank	Blank	½ clouded	W. Kennedy.
Saint Ann's Head	29.44	747.8	29.60	751.8	52	11.1		W			5		4					Squally	John C. Walker.
Sandwick Manse, (Orkneys)			29.22	742.2	50	10.0		S	15	6.7			7					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.24	768.1	59.4	15.2		NE			2		8					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.32	744.7	29.55	750.6	57.9	14.4		SW			4		10			0.14	3.6	Overcast	W. F. Cooper.
Silloth Rectory	29.38	746.2	29.41	747.0	50.8	10.4	94	SW			3		10			0.430	10.92	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					51.0	10.6		W			3		10					Raining	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)			29.07	738.4	50	10.0		SW			5		5					D. clouds	John Smith.
Stratfield Turgiss	29.59	751.6	29.80	756.9	59.7	15.4		SW			2		10					Showery	Rev. C. H. Griffith, F. M. S.
Thurso			29.19	741.4	54	12.2		SSW			3		7					D. clouds	John Trotter.
Truro, Royal Institution			29.78	756.4	58	14.4		W			4		10					Raining	W. Newcombe.
Valencia, Observatory			29.62	752.3	54.0	12.2		SW	29	13.0			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		S			7		10			0.15	3.8		Henry Mercer.
Cape Good Hope, Obs'y	30.18	766.6	30.22	767.6	62.6	17.0	68	W	12	5.4		8	9						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.34	770.6	49.0	9.4	87	NW			2		0			0.21	5.3	Clear	Francis Abbott, F. R. A. S.
Leith, Restairig Park			29.36	745.7	54.9	12.7		SW			3		10k			0.06	1.5	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.96	761.0	30.15	765.8	76.9	24.9	68	E	17.5	7.8		3	9	E	E	0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.40	772.1	30.49	774.4	46.2	7.9	83	SE	4	1.8			3			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.14	740.1	53	11.7		S			7	3	5	S		0	0		J. Younreclause.
North Unst, (Shetland Is.)			29.23	742.4	52	11.1		W			4	2	3	W					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.: Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Observer.
S. S. Algeria			Capt. W. Watson.
S. S. Batavia, N. 50° 35′, W. 15° 50′	3	WSW	Capt. J. E. Monland.
Ship Camperdown			Capt. A. T. Miller.
Brig Catherine, N. 48° 50′, W. 47° 45′	2	NNE	Capt. Adam Smith.
Barque Celeste			Capt. D. F. McKechnie.
S. S. Hibernia			Capt. W. R. Cato
Barque Maroon			Capt. A. T. Brown.
Ship Mikado			Capt. C. C. Prehn.
S. S. Seine, N. 51° 32′, W. 34° 6′	8	WNW	Capt. H. Manning.
Barque Sorata			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0			67.1	19.5	92	SE			3	3c	1ks		E				Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.70	754.3	29.74	755.5	48.6	9.2	91	SW			4		10					Foggy	
Fanöe	29.69	754.1	29.71	754.6	53.4	11.9	94	WSW			2		5						
Godthaab, (Greenland)	29.35	745.6	29.40	746.7	32.7	0.4	96	NW			2		10					Snowing	
Stykkisholm, (Iceland)	28.67	728.2	28.71	729.3	40.5	4.7	97	NE			9		8						
Thorshavn, (Faröe)	29.04	737.5	29.07	738.4	51.6	10.9	82	S			3		10						
Vestervig	29.44	747.7	29.61	752.0	49.6	9.8	98	SW			6		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.56	750.7	30.11	764.7	53.6	12	89	SW			2		10		N	Blank	Blank	Covered	Collignon, Director.
Amiens, Normal School	29.85	758.3	29.97	761.1	62.2	16.8	72	SW			3		5		W	0.047	1.2	Cloudy	Bonvarne, Director.
Avignon, Normal School	30.25	768.3	30.33	770.3	62.2	16.8	61	SW			2		2		SW	0	0	Slightly cl'dy	Mr. Giraud, Director.
Bar-sur-Seine	29.53	750.0	30.08	764.1	64.8	18.2	51	SW			2		8kn		SW	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.86	758.4	30.02	762.5	63.7	17.6	70	S	13.0	5.8					SW	0.114	2.9		Albert Cheux.
Beauvais	29.74	755.3	30.02	762.4	59.2	15.1	80	SSW			3		10		WSW	0.04	1.	Covered	Normal School.
Besançon	29.33	744.9	30.23	767.7	63.0	17.2	54	SSE			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.37	745.9	30.30	769.5	63.5	17.5	49	S			6		0			0	0	Clear	Normal School.
Bourges, Normal School	29.89	759.1	30.07	763.8	64.8	18.2	50	SSW			2		5		SE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.2	29.84	757.8	58.5	14.7	89	SW			5		10		SW	0.266	6.75	Foggy	The Staff.
Carcassonne, Normal School	29.88	758.9	30.30	769.5	58.6	14.8	87	E			2		2		E	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.87	758.8	29.95	760.6	61.3	16.3	75	N			6		5		N	0.008	0.08	Cloudy	Normal School.
Chartres, Normal School	29.43	747.6	30.00	761.9	62.2	16.8	75	S			3		7			0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.76	755.8	30.08	764.0	63.5	17.5	67	S			4		5k		S	0.039	1.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.76	730.6	30.08	763.9	72.7	22.6	25	SE			1		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.23	742.4	30.11	764.7	57.7	14.3	69	WSW			6		ck		WSW	0.024	0.6	Clear	Dr. Goulet, Director.
Commune de Gréasque*	29.20	741.6	30.34	770.6	62.1	16.7	57	NW			2		8		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.87	758.6	30.08	764.0	63.7	17.6	40	SW			6		8		SW	0.08	2.	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.77	756.1	30.08	763.9	58.1	14.5	82	SW			4		8		SW	0.059	1.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.28	743.7	30.27	768.8	60.6	15.9	59	SW			4		5			0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.91	759.6	30.01	762.2	62.6	17.0	80	S			4		10			0.335	8.5	Covered	T. Carré, Director.
Mâcon, Normal School	29.52	749.8	30.13	765.2	57.7	14.3	82	S			6		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.16	740.7	30.20	767.1	59.0	15	61	SW			2		2		NE	0	0	Slightly cl'dy	Normal School.
Nismes, Normal School	30.07	763.8	30.27	768.9	59.9	15.5	72	S			1		5		NE	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.67	753.5	30.05	763.2	60.8	16	69	SSW			2		8		SW	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.80	756.8	30.03	762.8	61.5	16.4	68	SSW			2		10k		SW	0	0	Covered	National Observatory.
Privas	29.22	742.3	30.30	769.7	53.6	12	69	E			2		5		NNE	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.08	763.9	30.11	764.7	65.1	18.4	77	SSW			4		10		SW	0.16	4.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.89	759.2	29.98	761.4	62.6	17.0	64	SSW			2		10		SW	0.110	2.8	Covered	F. Lucard, Director.
Tarbes, Normal School	28.94	735.0	30.02	762.6	55.2	12.9	90	WSW			1		5			0.39	10.	Cloudy	T. Hugues, Director.
Villefranche	29.50	749.4	30.21	767.2	68.2	20.1	81	SE			3		2		Calm	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.3	29.80	757.0	79.0	26.1										0	0		L'Abbé Marchési.
Marseilles, Observatory			30.26	768.6	65.8	18.8	68	WNW			1		7			0	0	Cloudy	The Staff.
Mont-Louis	25.08	636.9	30.39	771.9	52.3	11.3	38	ESE	11.2	5.00			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.75	755.6	30.02	762.6	62.1	16.7	65	SW			3-4		10		SW	0	0		Marié Davy, Director.
Perpignan			30.24	768.2	60.3	15.7	73	NW	3.7	1.67			2			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.41	543.9			43.0	6.1		SW			2		4					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.70	576.5			48.2	9.0		SW			2		4			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.87	758.8	30.04	763.0	63.9	17.7	60	SW			3		10			0	0		E. Renou.
Toulouse, Observatory	29.50	749.3	30.23	767.7	65.3	18.5	62	SE			3		1			0	0		The Staff.
Tours	29.86	758.4	30.06	763.4	63.7	17.6	70	SW			3		10		WSW	0	0		C. Marquet.
Versailles, (near Paris)			30.04	763.0	61.5	16.4	56	W			2		10			0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.16	766.0	30.18	766.6	54.5	12.5	79	N	4.5	2.0		9cs				0	0	Lunar halo	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7: no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.82	757.4	29.99	761.7	53.8	12.1	82	S			2		8			0	0		Prof. Arndt.
Breslau	29.59	751.6	30.12	765.1	55.4	13.0	54	SSW			2		10			0	0		Royal University Obs'y.
Carlsruhe	29.68	753.9	30.11	764.7	62.6	17.0	52	SW			4		3			0	0		Albert Senz.
Cassel	29.44	747.8	30.05	763.3	57.6	14.2	67	SSW			4		8	S		0	0		Dr. H. Möhl.
Crefeld	29.81	757.1	29.97	761.2	58.8	14.9	77	SW			5		8			0	0		Director Lose.
Emden	29.84	758.0	29.88	758.9	56.5	13.6	89	WSW			3		1			0.028	0.7		Prof. Prestel.
Frankfort on the Main	29.76	756.0	30.13	765.3	57.2	14.0	35	SSW			3		9			0	0		Physical Society.
Friedrichshafen	28.80	731.4	30.26	768.5	47.8	8.8	81	SSW					8	WSW		0	0	Foggy	M. Wilhelm.
Hamburg	29.82	757.4	29.89	759.2	53.1	11.7	98	SW			5		10			0.004	0.1	Light rain	Captain F. Hegemann.
Kiel	29.80	757.0	29.82	757.4	52.2	11.2	97	S			1		10			0.010	0.25		Prof. G. Karsten.
Königsberg, (Prussia)	29.84	757.9	29.91	759.7	48.4	9.1	78	SW										Cloudy	Prof. E. Luther.
Köslin			29.89	759.3	49.1	9.5		S			4		4			0	0		H. Müller.
Leipsic, Observatory	29.66	753.5	30.09	764.2	58.1	14.5	58	SSW			3		9	W		0	0		Prof. Bruhns.
Memel, Naval School	29.92	759.9	29.97	761.1	38.5	3.6	95	SE			2		10n					Light fog	Reinbrechtvon Skalweit.
Neufahrwasser	29.93	760.1	29.94	760.5	50.4	10.2	74	SW			4		10			0.110	2.8		A. Lothes.
Posen	29.42	747.3	29.71	754.6	54.5	12.5	83	W			2		10			0	0	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.60	751.9	30.15	765.7	60.6	15.9	51	S			4		5	W		0	0		Dr. Schur.
Stuttgart	29.19	741.5	30.13	765.2	59.9	15.5	49	SW			4		2	W		Blank	Blank		Prof. Schoder.
Treves, (Trier)	29.44	747.8	29.97	761.1	58.3	14.6	70	WSW			6		2			0.156	3.97	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.66	728.0	30.16	766.1	56.8	13.8	50	SSW			1		7ck	S		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.58	758.9	29.92	760.0	51.1	10.6	84	SW			3		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.81	757.1	30.20	767.0	61.9	16.6		NE			Strong							½ cloudy	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.87	758.8	29.92	760.0	81.8	27.7	46	WSW	17.0?	7.6?			0			0	0	Blue sky	
Deesa	29.44	747.9	29.92	760.0	83.7	28.7	40	Calm					0			0	0	Blue sky	
Bombay	29.83	757.6	29.87	758.6	84.1	28.9	73	NW	7.0	3.1			6	WSW		0	0	Misty	
Poona	27.83	706.8	29.82	757.5	79.9	26.6	77	SW					8	SW		0	0	D. clouds	
Lahore	29.16	740.6	29.91	759.8	73.3	22.9	41	Calm	0.8	0.4						0	0		
Belgaum	27.36	695.0	29.93	760.1	72.0	22.2	86	E	2.0	0.9			9		SE	0.46	11.7	Gloomy	
Bangalore																			
Roorkee	29.00	736.6	29.91	759.7	75.4	24.2	38	Calm	1.1	0.5						0	0		
Agra	29.32	744.8	29.89	759.2	79.3	26.3	38	W								0	0		
Trichinopoly																			
Nagpur	28.85	732.7	29.90	759.6	73.6	23.1	89	Calm	2.4	1.1			9			0.50	12.7		
Madras																			
Lucknow	29.52	749.8	29.90	759.3	77.3	25.2	41	NNW	2.5	1.1						0	0	Blue sky	
Allahabad	29.58	751.2	29.89	759.2	77.7	25.4	48	N	0.8	0.4			2			0	0	D. clouds	
Patna	29.71	754.6	29.88	759.1	86.8	30.4	24	W	1.2	0.5			2	W	W	0	0		
Hazaribagh	27.90	708.5	29.95	760.6	69.6	20.9	69	Calm	3.0	1.3			10					Drizzling	
Cuttack	29.80	756.9	29.88	759.0	81.0	27.2	72	NNE	2.1	0.9			9			0.10	2.5	Raining	
Calcutta (Alipore)	29.90	759.5	29.92	760.0	81.3	27.4	65	N	4.0	1.8			8			0	0	Overcast	
Goalpara	29.51	749.4	29.90	759.5	75.0	23.9	69	E	0.3	0.1			9			0	0	D. clouds	
Chittagong	29.82	757.3	29.91	759.6	78.9	26.1	82	NE	0.5	0.2			0			0	0	Blue sky	
Sibsagar	29.58	751.2	29.92	759.8	76.2	24.6	77	NNE	2.3	1.0			10	W	W	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.50	723.9	29.86	758.5	82.0	27.8	68	NE	2.4	1.1			8	NW	NE	0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.39	568.8	30.26	768.5	37.2	2.9	45	NNW			1		10	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.37	568.2	30.30	769.7	36.7	2.6		WSW			2		8	N		0	0		Signora Ernesta Manfredi.
Udine	29.83	757.7	30.25	768.3	59.2	15.1	23	Calm	0	0			4			0	0		Prof. Giovanni Clodig.
Padua	30.13	765.4	30.24	768.2	57.4	14.1	39	SE	0	0			1			0	0		Prof. Dott. Lorenzoni.
Vicenza	30.06	763.4	30.25	768.4	55.9	13.3	41	SE	1.3	0.6			2	E		0	0		Conte Alm. Da Schio.
Verona	30.10	764.4	30.32	770.1	62.6	17.0	50	S	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.93	734.9	30.26	768.6	57.6	14.2	55	S			1		4			0	0		Prof. Trionfini Carlo.
Domodossola	29.22	742.2	30.26	768.7	52.7	11.5	67	E			1		10			0	0		Prof. Giuseppe Calza
Milan	29.76	755.9	30.29	769.4	58.6	14.8		NW			1		4			0	0		Ab. Gio. Capelli.
Pavia	29.93	760.3	30.28	769.2	55.4	13.0	56	W			1		1			0	0		Prof. Gio. Cantoni.
Moncalieri	29.37	745.9	30.29	769.4	53.4	11.9	51	NNE	0	0			9			0	0		Prof. P. F. Denza.
Mondovi	28.33	719.6	30.26	768.7	56.7	13.7	81	NW			2		5			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.07	763.8	30.30	769.5	63.0	17.2	55	SW			4		6			0	0		Prof. L. Vassallo.
Genoa	30.10	764.6	30.27	768.9	61.5	16.4	42	SW	1.8	0.8			2	SW		0	0		Prof. G. M. Garibaldi
Piacenza	30.03	762.8	30.29	769.3	57.0	13.9	44	NW	5.6	2.5			6			0	0		Dott. G. Manzi.
Parma	29.96	761.0	30.28	769.1	60.3	15.7	34	NNW			4		3			0	0		Prof. P. Pigorini.
Florence	30.02	762.5	30.28	769.1	60.3	15.7	30	W			2		0			0	0		Cav. F. Meucci.
Leghorn	30.19	766.9	30.28	769.1	61.3	16.3	50	NE	0	0			2			0	0		Prof. P. Monte.
Siena	29.63	737.3	30.28	769.2	63.5	17.5	28	ENE	0	0			0			0	0		Prof. L. Toscani.
Urbino	28.73	729.7	30.30	769.7	55.2	12.9	36	NE			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.25	768.3	30.30	769.6	54.9	12.7	56	N	19.2	8.6			0			0	0		Prof. Luigi Guidi.
Ancona	30.15	765.9	30.26	768.6	57.6	14.2	59	NW			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.19	766.9	30.31	769.8	67.3	19.6	41	WSW			2		3	SE		0	0		Avv. P. Ponticelli.
Rome	30.07	763.6	30.24	768.1	64.6	18.1	55	N	0.7	0.3			0			0	0		Prof. P. A. Secchi.
Naples, O. U.	30.05	763.2	30.25	768.3	67.3	19.6	38	NNE			2		1	ENE		0	0		Prof. L. Palmieri.
Lecce					63.5	17.5	45	ENE	12.5	5.6			4			0	0		Prof. C. De Giorgi.
Cosenza	29.35	745.6	30.25	768.3	61.3	16.3	77	NE	0.7	0.3			2	NW		0	0		Prof. F. D. Conti.
Cagliari	30.00	761.9	30.19	766.7	68.4	20.2		S			2		4	N		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.13	765.3	30.18	766.5	65.1	18.4	57	ESE			4		2			0	0		Prof. F. Caflero.
Palermo	29.92	760.0	30.18	766.5	64.6	18.1	61	NE	5.6	2.5			9			0.701	17.8		Prof. G. Cacciatore.
Caltanissetta	28.19	716.1	30.13	765.3	61.7	16.5	44	NNE			4		3			0	0		Prof. A. Pagani.
Syracuse	30.04	763.0	30.11	764.9	65.5	18.6	71	ENE			6		10			0.248	6.3		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.70	754.3	30.25	768.4	64.4	18.0	37	NE	1.8	0.8			0			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,14[illegible].3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.78	756.4	29.88	759.0	59	15.0	88						10s		S	0	0	Cloudy	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.14	587.8	30.19	766.8	54.0	12.2	87	Calm	0	0			10k		SW	0.10	2.5	Foggy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.92	760.0	29.92	760.0	58.6	14.8		SW			4					0.012	0.3		
Groningen	29.80	756.8	29.85	758.2	55.9	13.3		SW			4					0.059	1.5		
Helder	29.82	757.3	29.82	757.3	56.8	13.8		SSW			5					0.047	1.2		
Hellevoetsluis			29.89	759.2	59.2	15.1	80	SW			4								
Utrecht	29.86	758.4	29.91	759.6	59.0	15.0	79	SSW			4		8			0.008	0.2	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.34	745.2	29.39	746.6	48.6	9.2	92	SSE	19.7	8.8			8			0.638	16.2	Raining	
Brōno	29.43	747.5	29.47	748.5	33.8	1.0	57	NE	7	3			7			0	0		
Christiania	29.34	745.1	29.48	748.9	37.0	2.8	93	NE	0	0			10			0.559	14.2	Light fog	
Tromsō	29.50	749.4	29.55	750.5	27.3	— 2.6	83	SW	4	2			3			0.252	6.4		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.05	763.3	30.24	768.1	65.7	18.7	88	W	2.5	1.1			3			0	0		Dr. J. A. Sampaio
Campo Major	29.21	741.8	30.20	767.1	74.8	23.8	46	Calm	0	0			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.15	765.7	30.22	767.5	70.9	21.6	87	Calm	0	0			10			0.402	10.2	Raining	Capt. D. A. de Cunha.
Lisbon, Observatory	29.86	758.5	30.22	767.5	67.5	19.7	72	SSW	11.2	5.0			10	SW		0	0		The Staff.
Ponta Delgada, (Azores)	30.19	766.8	30.26	768.6	72.1	22.3	55	WNW	4.3	1.9			6			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell: Height scale 0—9	Sea or swell: Direction from—	Observer.
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.67	753.5	30.09	764.3	52.5	11.4	70	S	9	4			10						Astronomical Obs.
Wilna	29.73	755.2	30.17	766.3	34.7	1.5	93	S	4	2			10					Rain & snow	Astronomical Obs.
Dorpat	29.80	756.8	30.05	763.2	37.0	2.8	57	SW	11	5			0						Prof. Dr. Weihrauch
St. Petersburg	29.93	760.3	29.95	760.7	37.8	3.2	75	WSW	9	4			9					Lt. graupel	Central Physical Obs.
Knopio	29.45	748.0	29.78	756.5	30.2	— 1.0	96	WSW	7	3			0?					Raining?	Ch. Forsten.
Kieff	29.63	752.7	30.29	769.4	43.0	6.1	59	WNW	4	2			8						Physical Cabinet.
Nikolaiev	30.31	769.8	30.38	771.6	52.5	11.4	59	W	0	0			0						Kurdakof.
Kertch	30.36	771.2	30.38	771.7	58.3	14.6	52	WNW	4	2			0						Lagorio.
Moscow	29.53	750.0	30.10	764.6	32.7	0.4	82	SSE	7	3			10						Meteorological Obs.
Lugan	30.00	762.1	30.21	767.3	46.9	8.3	65	WNW	18	8			7						Meteorological Obs.
Archangel	29.59	751.5	29.61	752.0	29.8	— 1.2	92	S	13	6			8						Ogorodnikof.
Tiflis	28.82	732.1	30.24	768.0	60.6	15.9	60	N	9	4			7						Physical Observatory.
Astrakhan	30.34	770.7	30.26	768.6	52.0	11.1	74	W	2	1			10						Sebastianof.
Kasan	29.60	751.9	29.88	759.0	35.8	2.1	85	SSW	2	1			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.12	739.6	30.10	764.5	33.3	0.7	71	SSE	2	1			10						Meteorological Obs.
Nukuss	29.83	757.7	30.06	763.5	66.7	19.3	38	N	2	1			8						
Kasaly																			Bobrof.
Tashkend	28.54	725.0	30.26	768.7	52.2	11.2	89	Calm	0	0			0					Foggy	Michelson.
Barnaul	29.80	756.9	30.34	770.5	45.0	7.2	65	Calm	0	0			4						Meteorological Obs.
Yeniseisk	30.11	764.9	30.26	768.6	37.9	3.3	100	SE	7	3			10			Blank	Blank		Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.97	761.3	30.11	764.9	41.9	5.5	24	NW	18	8			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					32.9	0.5	87	NE	9	4			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashken l, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.01	711.4	30.20	767.0	68.4	20.2	58	SE	4.5	2.00		1	1	WNW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.3	30.02	762.4	77.8	25.4	87	Calm	0	0		0	9k;n			0	0	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.13	765.4	30.23	767.9	75.0	23.9	51	ESE	17.1	7.6		4	3	E	SE	0	0		Capt. C. Fajazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.87	758.8	81.0	27.2	86	SW				0k	2kn	E	E	0.207	5.25	Clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.68	753.8	29.72	754.8	27.7	— 2.4		W			2		0			0	0		
Umea	29.64	752.8	29.69	754.1	32.7	0.4	92	Calm			0		9			0	0		
Hernosand	29.57	751.0	29.62	752.3	33.4	0.8	92	SSW			2		10			0	0		
Stockholm	29.44	747.8	29.62	752 3	42.4	5.8	94	S			4		10			0.177	4.5	Raining	
Wisby	29.70	754.3	29.76	755.8	45.3	7.4	51	SW			4		10			0.012	0.3	Raining	
Sub-Series.																			
Upsala	29.54	750.3	29.61	752.2	36.7	2.6	99	SE	10.1	4.5			10			0.250	6.35	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.80	731.6	30.21	767.2	63.1	17.3	40	SW			1		1			0	0		The Observatory.
Zurich	28.60	726.4	30.24	768.2	51.8	11.0	72	SW			1		5			0	0	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +5.5 mm; Thermometer, +5.8 cent.; Relative Humidity, —33 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.30	769.6	58.6	14.7	67	NE	12	5.5			8		ENE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.34	770.6	63.1	17.3		NE			1		2						B. Stefanides.
Valona			30.21	767.2	66.6	19.2		W			1		2			0	0	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.95	760.6	80.1	26.7	58	N			2		2ks			0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B																			Hon. J. Ferguson.
Brockville, Ontario			29.86	758.4	32	0.0		NE	1	0.4			8s		NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B			29.83	757.7	35	1.7	77	E	7	3.1		2c	8n	W	E	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			29.81	757.2	41	5.0	71	NE	10	4.5			8ks		NE	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.59	751.6	29.79	756.7	33.0	0.6	73	N			1	8cs	2s	W		0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.86	758.4	29.80	759.2	28.0	— 2.2	88	W			1					0	0	Threatening	H. A. Johnson.
Esquimault, B. C.	29.79	756.7	29.83	757.7	47.3	8.5	100	N					10			0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec			29.88	758.9	27	— 2.8	86	Calm	0	0		5cs	2s	W	Calm	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	29.76	755.9	29.82	757.4	35	1.7	73	NE	11	4.9			10s			Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.86	758.4	28	— 2.2	96	S	1	0.4		Haze	Sm'e	S	S	0	0	Smoky	James Stewart.
Goderich, Ontario	29.16	740.7	29.99	761.7	31.7	— 0.2	90	Calm			0	0	2s			0	0	Fine	H. J. Strang, M. A
Granton, Ontario	28.83	732 3	29.98	761.5	28	— 2.2	71	Calm			0	0	0			0	0	Clear	James Grant.
*Halifax, N. S	29.54	750.3	29.68	753.9	44	6.7	84	NE	7	3.1			10n			0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.56	750.8	29.94	760.5	39.5	4.2	59	W			2	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F	29.93	760.2	29.96	761.0	39	3.9	82	NW			1		3s			0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.50	749.3	29.87	758.7	34	1.1	78	N	4	1.8		8k	0	Calm		0	0	Fair	S. Woods, M. A
*Montreal, Quebec	29.60	751.8	29.80	756.9	33	0.6	77	E	6	2.7		8ok	2ks	SW		0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.22	742.2	29.95	760 7	26	— 3.3	82	Calm	0	0		0	0			0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.15	740.4	29.92	760.0	32.7	0.4	74	NW			1	0	0			0	0	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.22	742.2	29.94	760.5	32	0.0	90	NW	6	2.7		0	0			0	0	Clear	H. Morgan.
Port Hastings, N. S	29.74	755.4	29.79	756.7	30.7	— 0.7		E	2	0.9						0.30	7.6	Dark	Peter Grant.
Port Stanley, Ontario	29.28	743.7	29.96	761.0	29	— 1.7	88	W	2	0.9		0	0			0	0	Clear	M. Payne.
*Quebec, Quebec	29.49	749.0	29.82	757.4	35	1.7	63	NE	17	7.6		0	0			0	0	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.45	748.0	29.93	760.2	27	— 2.8	94	NW	8	3.6		0	0			0	0	Clear	W. H. McIntyre.
St. John, N. B	29.57	751.1	29.74	755.4	35	1.7	70	N	12	5.4			10s			0.39	9.9		G. Murdock, C. E.
*Saugeen, Ontario	29.22	742 2	29.95	760.7	30	— 1.1	89	Calm	0	0		0	0			0	0	Clear	K. Stewart.
Stayner, Ontario			29.95	760.7	30	— 1.1	90	Calm	0	0		0	0			0	0	Clear	R. J. Cole.
Stratford, Ontario	28.65	727.7	29.98	761.5	28.6	— 1.9	89	NW	3	1.3		0	0			0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	29.82	757.4	29.85	758.2	30	3.9	93	E	1	0.4			10n		SE	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.55	750.6	29.94	760.5	34	1.1	67	NW	5	2.2		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N. S	29.60	751.8	29.70	754.4	42.0	5.6	83	E	6	2.7			10n			0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					33.0	0.6	100	S					10n			0	0	Hazy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.44	747.8	29.67	753.6	37	2.8	100	NW	16	7.2			10n		Calm	0.68	17.3	Light rain	
Alpena, Michigan	29.28	743.7	29.95	760.7	31	— 0.6	79	NW	5	2.2		0	0			0	0	Clear	
Atlantic City, New Jersey	29.48	748.8	29.50	749.3	46	7.8	100	NW	22	9.8			10n		NW	0.33	8.4	Light rain	
Augusta, Georgia	29.75	755.6	29.93	760.2	54	12.2	83	W	2	0.9		2c	Sm'e	W	W	0	0	Smoky	
Baltimore, Maryland	29.57	751.1	29.62	752.3	51	10.6	72	NW	8	3.6			10s		NW	0.30	7.6	Cloudy	
Barnegat, New Jersey	29.45	748.0	29.47	748.5	47	8.3	100	NW	30	13.4			10n		NW	1.34	34.0	Light rain	
Bismarck, Dakota	28.01	711.4	29.72	754.9	31	— 0.6	78	NW	1	0.4		0	Sm'e		Calm	0	0	Clear	
Boise City, Idaho	27.04	686.8	29.64	752.8	44	6.7	67	SE	4	1.8		2ck	2s	SE	SE	0	0	Fair	
Boston, Massachusetts	29.39	746.5	29.55	750.6	38	3.3	90	N	19	8.5			10n		N	0.54	13.7	Light rain	
Brackettville, Texas	29.61	756.8	30.08	764.0	40	4.4	63	NW	1	0.4		0	0			0	0	Clear	
Breckenridge, Minnesota	28.81	731.8	29.83	757.7	30	— 1.1	89	SE	9	4.0		0	0			0	0	Clear	
Brownsville, Texas	30.10	764.5	30.17	766.3	59	15.0	76	NE	2	0.9			10s		Calm	0	0	Cloudy	
Buffalo, New York	29.15	740.4	29.86	758.4	36.6	2.2	80	N	5	2.2		2c	0	N		0.08	2.0	Fair	
Burlington, Vermont	29.50	749.3	29.76	755.9	37	2.8	53	N	6	2.7			10s		N	0	0	Cloudy	
Cairo, Illinois	29.76	755.9	30.16	766.1	44	6.7	84	NW	6	2.7		0	0			0.02	0.5	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.77	680.0	30.23	768.6	40	4.4	73	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.63	752.6	29.64	752.8	61	16.1	66	W	14	6.3		0	0			0.47	11.9	Clear	
Cape Henry, Virginia	29.58	751.3	29.61	752.1	59	15.0	76	W	13	5.8		5k	5s	W	W	2.28	57.9	Cloudy	
Cape Lookout, N. Carolina	29.74	755.4	29.75	755.6	62	16.7	66	NW	36	16.1		1k	0	Calm		0	0	Fair	
Cape May, New Jersey	29.50	749.3	29.53	750.0	50	10.0	86	NW	34	15.2			10s		NW	0.35	8.9	Cloudy	
Charleston, South Carolina	29.86	758.4	29.93	760.2	56	13.3	74	W	10	4.5		2c	0	W		0	0	Fair	
Cheyenne, Wyoming	23.99	609.3	29.93	760.2	31	— 0.6	79	NW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.31	744.5	30.01	762.2	40	4.4	82	N	3	1.3			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.32	744.7	29.97	761.2	41	5.0	73	NW	4	1.8		0	Fog		NW	0.07	1.8	Clear	
Cleveland, Ohio	29.23	742.4	29.96	761.0	44	6.7	59	N	11	4.9		2k	0	N		0.37	9.4	Fair	
Concho, Texas					33	0.6	69	SW	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.71	754.6	30.20	767.1	41	5.0	83	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.42	747.3	30.08	764.0	40	4.4	91	W	4	1.8		0	Haze		Calm	0	0	Fair	
Denison, Texas	29.37	746.0	30.20	767.1	41	5.0	82	NW	5	2.2		0	0			0	0	Clear	
Denver, Colorado	24.80	629.9	30.02	762.5	32	0.0	79	S	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.28	743.7	29.97	761.2	36	2.2	80	NW	5	2.2		0	1s		Calm	Inap.	Inap.	Clear	
Dodge City, Kansas	27.49	698.2	29.85	758.2	36	2.2	70	SW	3	1.3		0	0			0	0	Clear	
Dubuque, Iowa	29.31	744.5	30.03	762.7	37	2.8	80	NW	1	0.4		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.14	740.1	29.82	757.4	40	4.4	73	NW	1	0.4		0	2s		Calm	0	0	Clear	
Eagle Pass, Texas	29.40	746.7	30.17	766.3	42	5.6	65	Calm	0	0		0	Fog		Calm	0	0	Clear	
Eastport, Maine	29.63	752.6	29.70	754.4	40	4.4	82	NE	17	7.6			10n		NE	Inap	Inap.	Light rain	
Erie, Pennsylvania	29.16	740.7	29.87	758.7	42	5.6	75	N	12	5.4		5k	0	N		0.03	0.8	Fair	
Escanaba, Michigan	29.23	742.4	29.89	759.2	35	1.7	70	SW	3	1.3		0	0			0	0	Clear	
Florence, Arizona	28.39	721.1	29.99	761.7	51	10.6	33	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.10	612.1	30.10	764.5	38	3.3	63	N	10	4.5		0	0			0	0	Clear	
Fort Craig, New Mexico																			
Fort Gibson, Indian Ter.	29.60	751.8	30.17	766.3	35	1.7	90	Calm	0	0			Fog			0	0	Foggy	
Fort Griffin, Texas	28.91	734.3	30.24	768.1	38	3.3	81	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.94	735.1	30.11	764.8	34	1.1	90	N	4	1.8		0	0			0	0	Clear	
Fort Sully, Dakota	28.17	715.5	29.87	758.7	31	— 0.6	89	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	30.13	765.3	30.18	766.6	53	11.7	67	N	10	4.5			10s		N	0	0	Cloudy	
Grand Haven, Michigan	29.32	744.7	29.98	761.5	35	1.7	90	SE	4	1.8		0	Sm'e		Calm	0	0	Clear	
Indianapolis, Indiana	29.26	743.2	30.06	763.5	39	3.9	91	Calm	0	0		0	Fog			0.08	2.0	Clear	
Indianola, Texas	30.16	766.1	30.18	766.6	52	11.1	73	NE	12	5.4		0	2ks		Calm	0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.97	761.2	29.99	761.7	59	15.0	76	NW	3	1.3		5c	0	W		0	0	Fair	
Keokuk, Iowa	29.44	747.8	30.08	764.0	42	5.6	83	NW	4	1.8		0	Haze		Calm	0	0	Clear	
Key West, Florida	29.97	761.2	30.00	762.0	78.5	25.8	67	NW	7	3.1			10s		W	0	0	Cloudy	
Kittyhawk, North Carolina	29.64	752.8	29.67	753.6	60	15.6	70	W	22	9.8		0	0			0.05	1.3	Clear	
Knoxville, Tennessee	28.89	733.8	29.39	759.2	49	9.4	77	NW	4	1.8			10ks		W	0	0	Cloudy	
La Crosse, Wisconsin	29.22	742.2	29.97	761.2	39	3.9	72	S	8	3.6		5ck	0	Calm		0	0	Fair	
La Mesilla, New Mexico	26.16	664.4	30.31	769.9	37	2.8	62	Calm	0	0		5c	0			0	0	Fair	
Laredo, Texas					46	7.8	76	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.26	743.2	30.13	765.3	37	2.8	95	Calm	0	0			Fog			0	0	Foggy	
Los Angeles, California	29.65	753.1	29.98	761.5	54	12.2	73	N	7	3.1		0	2s		N	0	0	Clear	
Louisville, Kentucky	29.48	748.8	30.04	763.0	43	6.1	91	NW	6	2.7		0	Fog		NW	0.05	1.3	Clear	
Lynchburg, Virginia	29.04	737.6	29.70	754.4	59	15.0	43	W	8	3.6		2k	0	W		0.03	0.8	Fair	
Maricopa Wells, Arizona					42	5.6	35	W				0	0			0	0	Clear	
Marquette, Michigan	29.13	739.9	29.83	757.7	42	5.6	58	W	4	1.8		0	0			0	0	Clear	
Mason, Texas	28.54	724.9	30.30	771.9	37	2.8	71	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.83	757.7	30.15	765.8	47	8.3	85	N	4	1.8		0	8'mc/fg			0.02	0.5	Clear	
Milwaukee, Wisconsin	29.31	744.5	30.02	762.5	38	3.3	71	SW	7	3.1		0	Sm'e			0	0	Clear	
Mobile, Alabama	30.08	764.0	30.12	765.0	51	10.6	93	NW	6	2.7		2c	0	NW		0	0	Clear	
Montgomery, Alabama	29.84	757.9	30.03	761.0	54	12.2	76	NW	8	3.6			10s		N	0	0	Cloudy	
Morgantown, West Virginia	28.82	732.0	29.88	758.9	43	6.1	83	W	1	0.4			10n		NW	0.67	17.0	Light rain	
Mt. Washington, N. H.	23.42	594.9	29.78	756.4	28	— 2.2	100	NE	18	8.0			10n		NE	0.37	9.4	Light snow	
Nashville, Tennessee	29.56	750.8	30.10	764.5	49	9.4	77	NW	1	0.4			10s		NW	0.09	2.3	Cloudy	
New Haven, Connecticut	29.36	745.7	29.48	748.8	39	3.9	92	NE	28	12.5			10n			0.77	19.6	Heavy rain	
New London, Connecticut	29.40	746.7	29.45	748.0	40	4.4	100	NE	12	5.4			10n		NE	0.41	10.4	Light rain	
New Orleans, Louisiana	30.08	764.0	30.14	765.5	56	13.3	68	NW	6	2.7			10ks		NW	0	0	Cloudy	
Newport, Rhode Island	29.40	746.7	29.45	748.0	44	6.7	92	N	16	7.2			10n		NE	0.98	24.9	Light rain	
New York, New York	29.38	746.2	29.55	750.6	41	5.0	100	N	16	7.2			10n		N	0.68	17.3	Light rain	
Norfolk, Virginia	29.61	752.1	29.66	753.4	57	13.9	75	W	12	5.4		2k	0	SW		2.13	54.1	Fair	
North Platte, Nebraska	27.08	687.8	29.72	754.9	33	0.6	69	W	8	3.6		0	0			0	0	Clear	
Olympia, Washington Ter.	29.77	756.1	29.81	757.2	47	8.3	100	Calm	0	0			Fog		Calm	0	0	Dense fog	
Omaha, Nebraska	28.94	735.1	30.04	763.0	40	4.4	82	SW	4	1.8		2cs	Sm'e	Calm	Calm	0	0	Clear	
Oswego, New York	29.48	748.8	29.80	756.9	39	3.9	63	N	20	8.9			10s		NE	0.09	2.3	Cloudy	
Pembina, Dakota	28.95	735.3	29.81	757.2	27	— 2.8	88	SE	4	1.8		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.51	749.5	29.56	750.8	45	7.2	84	N	17	7.6			10s		NE	0.49	12.4	Threatening	
Phœnix, Arizona					52	11.1	28	E				1c	0	NW		0	0	Clear	
Pike's Peak, Colorado	17.78	451.6	29.99	761.7	11	—11.7	40	NW	21	9.4		8c	0	W		0	0	Cloudy	
Pioche, Nevada	23.98	609.1	29.75	755.6	38	3.3	45	S	6	2.7			10s		Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.03	737.3	29.85	758.2	42	5.6	83	N	9	4.0		5k	0	N		0.48	12.2	Fair	
Port Huron, Michigan	29.26	743.2	29.94	760.5	40	4.4	82	SW	5	2.2			10ks		N	0	0	Cloudy	
Portland, Maine	29.60	751.8	29.65	753.1	37	2.8	80	N	21	9.4			10n		NE	0.30	7.6	Light rain	
Portland, Oregon	29.80	756.9	29.90	759.4	50	10.0	100	N	1	0.4			Fog		Calm	0	0	Foggy	
Prescott, Arizona	24.77	629.2	30.13	765.3	46	7.8	48	Calm				0	0			0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	73	22.8	71	NW	16	7.2		5cs	5ks	Calm	W	0	0	Cloudy	
Red Bluff, California	29.62	752.3	29.97	761.2	57	13.9	87	S	2	0.9			10n		Calm	0.07	1.8	Light rain	
Rochester, New York	29.20	741.7	29.81	757.2	40	4.4	73	N	7	3.1		2c	2s	Calm	SE	0.15	3.8	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.31	744.5	29.88	758.9	51	10.6	96	Calm	0	0			10n		Calm	0.20	5.1	Light rain	
Sacramento, California	29.91	759.7	29.99	761.7	55	12.8	90	S	4	1.8			10ks		SW	0.01	0.3	Cloudy	
St. Louis, Missouri	29.55	750.6	30.14	765.5	42	5.6	83	NW	2	0.9		0	Fog			0.01	0.3	Foggy	
St. Marks, Florida	30.04	763.0	30.06	763.5	52	11.1	93	NW	4	1.8		8c	0	NW		0	0	Fair	
St. Paul, Minnesota	29.04	737.6	29.87	758.7	41	5.0	74	Calm	0	0		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.59	650.0	29.92	760.0	52	11.1	34	SE	2	0.9		10k	0	NW		0	0	Cloudy	
San Antonio, Texas	29.49	749.0	30.10	764.5	45	7.2	92	N	2	0.9		0	0			0	0	Clear	
San Diego, California	29.93	760.2	30.00	762.0	59	15.0	81	NE	6	2.7			10s		W	0	0	Cloudy	
Sandusky, Ohio	29.29	744.0	29.97	761.2	44	6.7	67	N	16	7.2		5k	0	N		0.44	11.2	Fair	
Sandy Hook, New Jersey	29.51	749.5	29.53	750.0	43	6.1	91	N	25	11.2			10n		N	0.67	17.0	Light rain	
San Francisco, California	29.93	760.2	29.99	761.7	58	14.4	90	SE	2	0.9			10s		Calm	Inap.	Inap.	Cloudy	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	34	1.1	74	E	3	1.3		0	Haze			0	0	Clear	
Savannah, Georgia	29.87	758.7	29.96	761.0	58	14.4	69	W	8	3.6		2c	0	W		0	0	Clear	
Shreveport, Louisiana	29.95	760.7	30.17	766.3	51	10.6	93	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
Smithville, North Carolina	29.84	757.9	29.87	758.7	56	13.3	74	W	6	2.7		1cs	0	Calm		0	0	Clear	
Springfield, Massachusetts	29.38	746.2	29.51	749.5	39	3.9	91	NE	9	4.0			10n		N	1.00	25.4	Light rain	
Stanwix, Arizona					48	8.9	42	NW				2c	0	Calm		0	0	Clear	
Stockton, Texas	27.10	688.3	30.10	764.5	34	1.1	79	S	2	0.9		0	0			0	0	Clear	
Thatcher's Island, Mass	29.49	749.0	29.54	750.3	44	6.7	92	NE	40	17.9			10n		NE	0.30	7.6	Light rain	
Toledo, Ohio	29.29	744.0	29.98	761.5	37	2.8	90	W	8	3.6		2cs	0	NW		0.15	3.8	Fair	
Tucson, Arizona	27.54	699.5	30.09	764.3	65	18.3	64	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	29.92	760.0	29.95	760.7	56	13.3	80	W	12	5.4		1c	0	Calm		0	0	Clear	
Umatilla, Oregon	29.52	749.8			45	7.2	85	SE	8	3.6		0	0			0	0	Clear	
Vicksburg, Mississippi	29.91	759.7	30.17	766.3	53	11.7	93	NW	4	1.8			10s		NW	0.04	1.0	Cloudy	
Virginia City, Montana	24.17	613.9	29.65	753.1	35	1.7	52	SE	4	1.8		5c	0	Calm		0	0	Fair	
Visalia, California	29.67	753.6	30.05	763.3	45	7.2	84	Calm	0	0		1c	0	NW		0	0	Clear	
Washington, D. C.	29.56	750.8	29.66	753.4	51	10.6	93	NW	9	4.0			10n		NW	0.49	12.4	Light rain	
Wickenburg, Arizona					38	3.3	36	SE				0	0			0	0	Clear	
Wilmington, N. Carolina	29.76	755.9	29.84	757.9	55	12.8	73	W	8	3.6		0	0			0	0	Clear	
Winnemucca, Nevada	25.60	650.2	29.96	761.0	38	3.3	71	SW	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	29.37	746.0	29.42	747.3	52	11.1	100	NE	11	4.9			10n		NE	1.35	34.3	Light rain	
Yankton, Dakota	28.69	728.7	29.99	761.7	41	5.0	82	SW	9	4.0		0	0			0	0	Clear	
Yuma, Arizona	29.78	756.4	29.94	760.5	57	13.9	36	Calm	0	0		5cs	0	Calm		0	0	Fair	
Sub-Series.																			
York Factory, B. A.	29.77	756.1	29.82	757.4	22.5	--5.3	100	NW	10	4.5			Fog			0	0	Foggy	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.94	760.5	29.96	761.0	79	26.1	82	Calm	0	0		4k	10n;ks	Calm	NE	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	81	27.2	82	Calm	0	0		8c	5s	Calm		0	0		James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	85	29.4		NE			2			NE		0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					86	30.0	76	E	5	2.2		2c	2k			0	0		G. O. Gellich.
Paramaribo, D. Guiana, S. A.			30.00	762.0	85	29.4	72	E			2	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			66.0	18.9	87	Calm			0		9s;ks			0.25	6.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,566 (?) ft., or 1,086.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Plocho, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Plocho, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.01	762.2	58	14.4	56	13 3	94	SSW	8	3.6			8		S	0	0			Cloudy	
Navy Yard, Pensacola, Fla.	30.15	765.8			56	13.3	87	N	4	1.8			6			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.67	753 6	59	15.0	35	1.7	90	NE	12	5.4			10			0.55	14.0			Rainy	
Naval Hospital, Yokohama, Japan	29.76	755.9	63	17.2	57.5	14.2	88	NNW			1		10s;fog		W	0	0			Cloudy	
Adams. Montevideo, Uruguay	30.00	762.0	63	17.2	61	16.1	66	NNW			1		0			0	0	None		Blue sky	
Alert. N. 36° 16′, E. 133° 23′	29 97†	761.2†	65	18.3	65	18.3	89	SW			4–6		1		W			Moderate.	W	Squally	
Alliance, Constantinople, Turkey.	30.37	771.4	63	17.2	61	16.1	66	NNE			3–4		9		N&W					Overcast	
Ashuelot. Tientsin, China	30.10	764.5	46	7.8	42	5.6	19	NNW			2		0					Smooth		Blue sky	
Canonicus, New Orleans, La	30.10	764.5	46	7.8	57	13.9	75	WNW			3		10							Cloudy	
Colorado, New York, N. Y	29.61	752.1	63	17.2	43	6.1	92	NW	20	8.9			10		N	0.78	19.8			Raining	
Despatch, Constantinop'e, Turkey.	30.43	772 9	78	25.6	61	16.1	71	NE			4–5		5		NE					Cloudy	
Franklin, Norfolk, Va	29.79	756.7	57	13.9	59	15.0	94	W	11	4.9			1		W	2.	51.			Clear	
Frolic, Washington, D. C	29.74	755.4	60	15.6	59	15.0	94	NW			3–4		10kn		W&N	Heavy	Heavy			Showery	
Gettysburg, Messina, Italy	30.02‡	762 5‡			74	23.3	95	NNE			1–2		1		Calm	Blank	Blank			D. clouds	
Kearsarge, N. 10° 48′, E. 55° 27′	29.89	759.2			84	28.9	91	ENE			1		8		N&E	0	0	Smooth		Misty	
Lackawana, Port Townsend, W. T.	29.83	757.7			54	12.2	87	Calm			0		10					Smooth		Foggy	
Marion, Smyrna, Turkey	30.08	764.0	69	20.6	70	21.1	57	NE			2		4		Calm	0	0	Smooth		D. clouds	
Michigan, Lake Michigan	29.40	746.7	59	15.0	45	7.2	68	SE			2		0							Clear	
Monocacy, Yokohama, Japan	29.75	755.6	64	17.8	63	17.2	78	W			2		9		SW	0	0	Smooth		D. clouds	
Monongahela, N. 35° 50′, W. 15° 54′	30.33	770.4	70	21.1	70	21.1	70	S&E			1		k					Smooth		D. clouds	
New Hampshire, Port Royal, S. C	30.10	764.5			62	16.7	72	WNW	21	9.4			9		NW	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.08	764.0	64	17.8	60	15.6	82	N	1	0.4			3		N	0	0	Smooth		Pleasant	
Onward, Callao, Peru	30.04†	763 0†	70	21.1	67	19.4	87	Calm			0		10					Long	W	D. clouds	
Ossipee, New York, N. Y	29.33	745.0	58	14.4	49	9.4	85	NE			5		10		NE					Raining	
Palos, Shanghai, China	30.19	766.8	64	17.8	56	13.3	75	NNW			1		10		Calm					Cloudy	
Pensacola, Mare Island, Cal	30.10	764.5			60	15.6	88	S&N			0–1		10			0	0			Overcast	
Plymouth, Norfolk, Va	29.92†	760.0†	60	15.6	57	13 9	81	W			3		1							Clear	
Ranger, Shanghai, China	30.28	769.1			60	15.6	71	NW			1		7		NW					Clear	
Rio Bravo, Brownsville, Texas	30.05	763.3			60	15.6	82	NW			2		8		NW					D. clouds	
Santee, Annapolis, Md	29.66	753.4	60	15.6	53	11.7	80	NNW			4		8		E	1.03	26.2			Cloudy	
St. Louis, League Island, Pa	29.49	749.0	48	8.9	47	8.3	92	N	8	3.6			10		N	0.78	19.8			Light rain	
Swatara, New York, N. Y	29.64	752.8			59	15.0	65	NW			3–4		10		N&W					Raining	
Tennessee, Yokohama, Japan	29.82	757.4	70	21.1	61	16.1	82	WNW	8	3.6			10		Calm	0	0	Smooth		D. clouds	
Trenton, Villefranche, France	30.30†	769.6†	67	19.4	66	18.9	68	SW	8	3.6			8		S&W	0	0			D. clouds	
Vandalia, Villefranche, France	30.32	770.1	65	18.3	65	18.3	63	SSW			1		7		SSE					D. clouds	
Wabash, Boston, Mass	29.53	750.0	43	6.1	38	3.3	91	NNE	13	5.8			10		Calm	0.39	9.9			Raining	
Wyoming, Washington, D. C	30.10†	764.5†	61	16.1	54	12.2		N&W			2		9							Rain; fog	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.20*	767.1*	76	24.4	82	E			2		7		E	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic																			Capt. John Metcalf.
S. S. Gaelic, N. 45° 00′, W. 173° 40′			29.12*	739.6*	54	12.2	93	W			5		8		W	Long	W	Raining	Capt. W. H. Kidley.
S. S. Oceanic, N. 33° 29′, E. 136° 16′			29.78	756.4	65	18.3	84	Var.			5–6		8		W	Rough	W	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 42° 21′, W. 56° 0′	N66E	11.0	29.86	758.4	63.5	17.5	89	SW			4		7k		W	Smooth		Overcast	Capt. K. Undütsc.
S. S. Nürnberg, N. 45° 23′, W. 52° 10′			29.92	760.0	64.0	17.8	73	ESE			3		N		SE	Light	ESE	Drizzling	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 50° 16′, W. 36° 56′			29.79*	756.7*	46	7.8	??	NW			2		10			Heavy	NW	Squally	Captain Sargent.
S. S. Ohio. Delaware River			29.61	752.1	48	8.9	92	N			5		10		Calm				Captain Morrison.
S. S. Pennsylvania, N. 58° 26′ W. 3° 02′			29.53†	750.0†	56	13.3	100	SW			6		8		SW	Smooth		Raining	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 36° 32′, W. 75° 14′			29.63	752.6	64	17.8	78	WNW	20	8.9		0	1s			Rough	N	Clear	Capt. James Jorgensen.

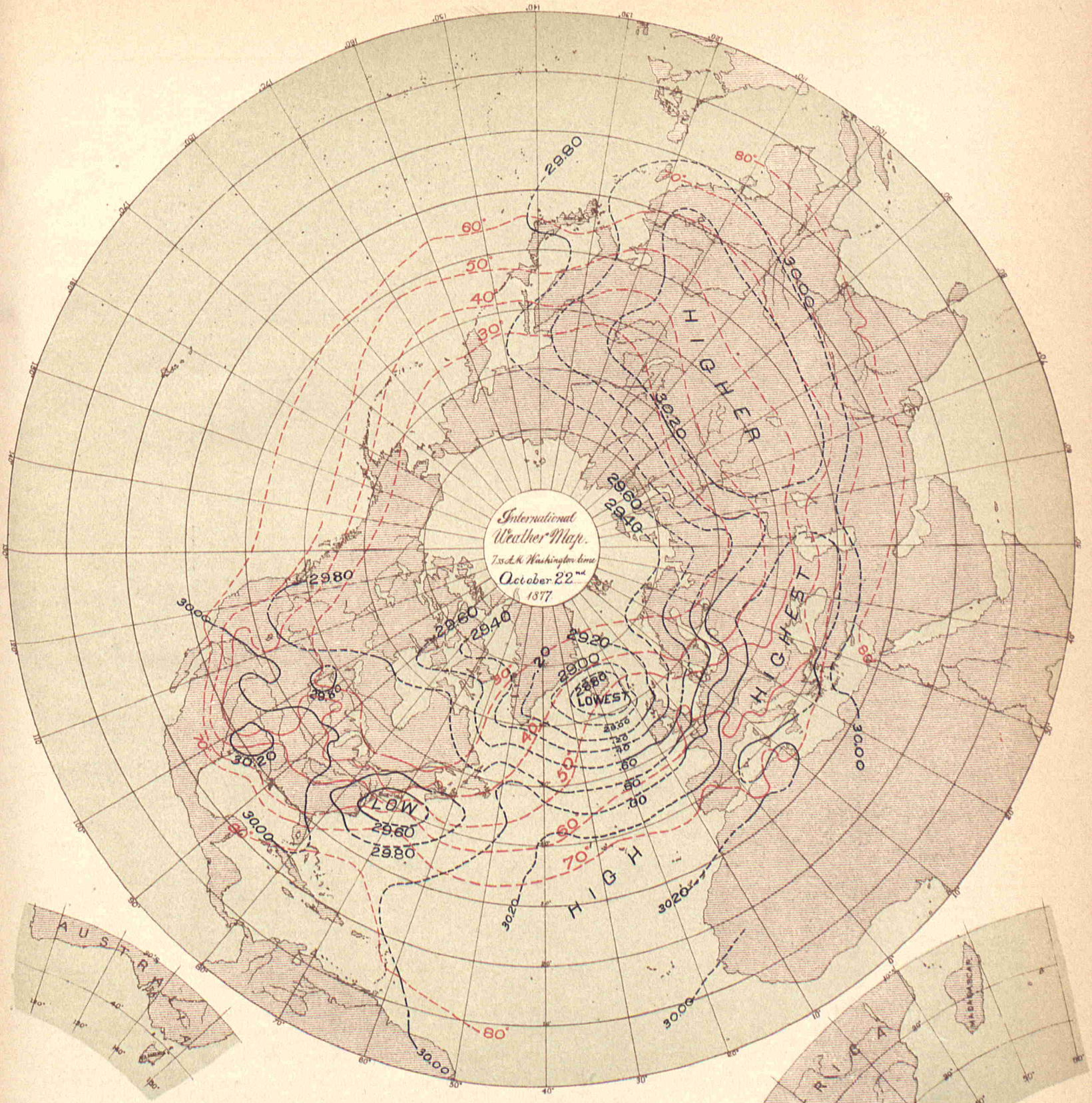
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 23, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.13	765.4	68.9	20.5	72	Calm			0		6			0	0	Cloudy	Michel.
Algiers			30.04	763.0	70.5	21.4	76	N			1		5			0	0	Cloudy	Peter.
La Calle			30.10	764.4	69.4	20.8	75	E			3		2			0	0	Fair	Fleury.
Tunis			30.10	764.5	70.0	21.1	50	N			3		6			0.165	4.2	Cloudy	Jacques.
Sfax			30.17	766.2	68.0	20.0		NW			2		3			0	0	Pretty Fair.	Husson.
Saida			30.13	765.3	68.7	20.4	26	SW			1		2			0	0	Fair	Millot.
Tebessa			30.14	765.6				NW			1		2			0	0	Fair	Bourgeois.
Geriville			30.13	765.2	65.3	18.5	41	NW			4		3			0	0	Pretty fair	Lemaillot.
Laghouat			30.10	764.5	69.8	21.0	34	W			4		4			0	0	Cloudy	François.
Biskra			30.19	766.7	75.7	24.3	54	SE			1		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.60	751.9	30.15	765.9	55.8	13.2	47	Calm			0		0			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.32	744.7	30.08	764.0	60.1	15.6	42	W			2		7			0	0		Dr. Wierzbiski.
Eperies	29.27	743.5	30.16	766.0	51.8	11.0	50	S			2		7cs			0	0		Julius Mikolik.
Gratz	28.85	732.7	30.11	764.8	51.3	10.7	64	SSW			2		2			0	0		Andreas Rospini.
Hermannstadt	28.76	730.4	30.18	766.6	54.7	12.6	41	ENE			1		0			0	0		Prof. Reissenberger.
Kremsmünster	28.66	727.9	30.00	762.1	51.1	10.6	68	ENE			2		3			0	0		Prof. C. Wagner.
Lemberg	29.11	739.5	30.11	764.7	54.5	12.5	62	S			2		3			0	0		Dr. T. Stanecki.
Pola	30.00	762.0	30.11	764.9	59.7	15.4	55	WNW			2		3cs			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.89	759.1	30.17	766.2	57.2	14.0	47	Calm			0		0			0	0		Karl Stancel.
Trieste	30.00	764.3	30.19	766.9	57.7	14.3	79	Calm			0		2			0	0	Clear	P. Busin.
Vienna	29.39	746.4	30.08	764.0	57.6	14.2	40	SE			1		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.35	720.1	29.85	758.1	53.4	11.9	93	SSW			4		10			1.110	28.2		Prof. M. Passau.
Brussels	29.47	748.5	29.67	753.5	57.7	14.3	91	SSW			6		10		SW	0.732	18.60	Raining	Royal Observatory.
Furnes	29.58	751.3	29.69	751.9	57.6	14.2	89	SW			5		10			0.307	7.8		M. E. de Cae.
Maeseyck	29.60	751.9	29.73	755.2	60.3	15.7	81	S			4		10			0.055	1.4	Raining	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Low'r. 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer.
Aberdeen	29.32	744.7	29.42	747.3	48.7	9.3		S	12	5.4			10			0	0	Misty	W. Boswell.
Ardrossan	29.23	742.4	29.24	742.7	47	8.3		ESE			2		10					Raining	William McNeil.
Armagh, Observatory			29.22	742.2	47.3	8.5		SSW	7	3.1			10					Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.30	744.2	49.5	9.7		SSE	20	8.9			10					Raining	John Hartnup.
Birr Castle, (Parsonstown)			29.33	745.0	50.1	10.1		WNW			1		8					D. clouds	J. Dreyer.
Bradford, Yorkshire	28.98	736.1	29.37	746.0	50.1	10.1		N			1		10			0.15	3.8	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	79	26.1		NE			2		9					Overcast	Pvt. G. W. Roberts, A
Cambridge, Observatory			29.40	746.7	53.0	11.7		SE			1		10					Raining	H. Todd. [H. C.
Cardington			29.36	745.7	52.0	11.1		S			1		10					Raining	John McLaren.
Chatham, School M. E.	29.30	744.2	29.42	747.3	56.2	13.4		S			4		10					Raining	Lt. Col. C. M. Martin, R. E.
Dartmoor	27.99	710.9	29.45	748.0	48.0	8.9		SW			5		7					Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.18	741.2	29.20	741.7	50	10.0		SW			3		5					D. clouds	J. Mac Gowan.
Dover	29.44	747.8	29.47	748.5	56	13.3		SSW			5		8					Drizzling	J. Costello.
Eccles, (near Manchester)			29.30	744.2	50.9	10.5		SE	7.2	3.2			10					Raining	Thomas Mackereth.
Falmouth, Observatory	29.19	741.4	29.41	747.0	54.3	12.4		SW			6		5					Squally	The Staff.
Fort Napier, (Natal)	27.74	704.6	29.95	760.7	71.5	21.9		E			2		8					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.96	761.0	81	27.2		W			0		5					D. clouds	
Galway, Queen's College					58	14.4		SW			4		5					D. clouds	R. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.09	764.3	30.12	765.0	73.2	22.9		SE			1		4					D. clouds	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.08	738.6	29.29	744.0	46.7	8.2		E			3		10					Raining	D. G. Maclean.
Great Yarmouth	29.47	748.5	29.48	748.8	52	11.1		SSE			4		4					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.22	742.2	29.39	746.5	56.6	13.7		SW			5		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.28	743.7	29.50	749.3	56	13.3		SW			6		10					Squally	Dr. S. E. Hoskins, F. R. S.
Helston			29.48	748.8	57	13.9		SW			6		8ck			0.26	6.6	Showery	M. P. Moyle.
Holyhead	29.20	741.7	29.25	742.9	50	10.0		W			4		3					D. clouds	John Tilston.
Jersey	29.26	743.2	29.55	750.6	57.8	14.3		SW			6		9			Blank	Blank	Threatening	J. Fisher.
Kew, Observatory			29.38	746.2	56.0	13.3		SSW	24	10.7			10					Threatening	The Staff.
Kingstown	29.26	743.2	29.29	744.0	49	9.4		WNW			5		9					Overcast	George Mitchell.
Leicester, Museum			29.39	746.5	51.7	10.9		NW			1		7					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.02	762.5	30.10	764.5	67.2	19.6		NE			2		6					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.27	743.4	29.36	745.7	45	7.2		Calm			0		10					Raining	W. D. Penny.
Nassau, (Bahamas)			30.08	764.0	79.8	26.6		N			3		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.18	741.2	29.37	746.0	52.3	11.3		SSE			3		10k;d		SSE	0.290	7.37	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.83	732.3	29.34	745.2	51.5	10.8		SE			3		10					Overcast	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.36	745.7	54	12.2		Calm			0		10					Misty	F. Lucas
Plymouth	29.34	745.2	29.41	747.0	55.2	12.9		WNW			4		2					D. clouds	John Merrifield.
Roche's Point	29.37	746.0	29.41	747.0	50	10.0		WNW			4		5			Blank	Blank	½ clouded	W. Kennedy.
Saint Ann's Head	29.16	740.7	29.32	744.7	50	10.0		WSW			5		8					Squally	John C. Walker.
Sandwick Manse, (Orkneys)			29.39	746.5	47.4	8.6		SW	7	3.1			8					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.11	764.8	63.4	17.4		NE			2		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.15	740.4	29.39	746.5	61.1	16.2		S			2		10			0.30	7.6	Overcast	W. F. Cooper.
Silloth Rectory	29.21	741.9	29.24	742.7	48.2	9.0	92	SW			5		10			0.210	5.33	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					48.9	9.4		SE			2		10					Raining	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.28	743.7	45	7.2		SSE			1		5					D. clouds	John Smith.
Stratfield Turgiss	29.19	741.4	29.40	746.7	52.9	11.6		S			1		10					Showery	Rev. C. H. Griffith, F. M. S.
Thurso			29.37	746.0	50	10.0		S			2		6					D. clouds	John Trotter.
Truro, Royal Institution			29.48	748.8	53	11.7		W			6		7					Gloomy	W. Newcombe.
Valencia, Observatory			29.42	747.3	50.8	10.4		WNW	16	7.2			6					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					49	9.4		SSW			7		10			0.50	12.7		Henry Mercer.
Cape Good Hope, Obs'y	30.24	768.1	30.28	769.1	67.6	19.8	50	SSE	21	9.4		1	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.26	768.6	52.0	11.1	88	W			2		10k			0.01	0.3	Cloudy	Francis Abbott, F. R. A. S.
Leith, Restalrig Park			29.35	745.5	47.0	8.3		SE			2		10s			0.54	13.7	Overcast	Andrew Gibb.
Mauritius, Observatory	29.96	761.0	30.15	765.8	76.1	24.5	56	E	16.3	7.3		1	2	WNW	ESE	0.04	1.0	Squally	C. Meldrum.
Melbourne, Observatory	30.32	770.1	30.41	772.4	49.6	9.8	83	SE	2	0.9			0			0	0	Very fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.29	744.0	52	11.1		SW			3	10	5	SE		0.4	10.		J. Youngclause.
North Unst, (Shetland Is.)			29.18	741.2	49	9.4		WNW			6	8	10	W					Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0–9	Direction from—		
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 45° 5′, W. 45° 15′			29.44	747.8	58	14.4		SSW			6		10			5	Confused	Raining	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 28° 32′			29.74	755.4	52	11.1		W			7		10			8	W	Raining	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			29.38	746.2	48	8.9		WNW			4		5					D. clouds	Capt. Alex Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0			66.2	19.0	96	NE			1	4cs	2d	NE	NE				Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.70	754.4	29.75	755.6	52.3	11.3	70	W			2		2						
Fanöe	29.67	753.7	29.69	754.2	51.8	11.0	85	WSW			4		7						
Godthaab, (Greenland)	29.71	754.7	29.76	755.8	31.5	—0.3	92	N			4		9						
Stykkisholm, (Iceland)	29.34	745.1	29.38	746.2	41.5	5.3	96	NE			6		0						
Thorshavn, (Faröe)	29.24	742.8	29.28	743.7	49.8	9.9	75	NW			2		3						
Vestervig	29.35	745.4	29.52	749.7	49.6	9.8	86	SW			4		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.22	742.3	29.78	756.3	53.6	12	89	SW			4		8		SW	Blank	Blank	Very cloudy	Collignon, Director.
Amiens, Normal School	29.53	750.1	29.64	752.9	58.6	14.8	91	SW			3		10			0.047	1.2	Covered	Bonvarne, Director.
Avignon, Normal School	30.00	762.0	30.08	764.0	61.7	16.5	75	ESE			3		8		S	0	0	Very cloudy	Mr. Giraud, Director.
†Bar-sur-Seine																0.154	3.9		C. Saillard.
Beaumette Obs'y (Angers)	29.54	750.3	29.70	754.4	58.8	14.9	91	SW	17.0	7.6			10		SW	0.433	11.0	Raining	Albert Cheux.
Beauvais	29.43	747.5	29.71	754.7	57.2	14	90	SW			4		10		SW	0.020	0.50	Covered	Normal School.
Besançon	29.06	738.0	29.93	760 3	65.5	18.6	55	S			4		5		SW	0	0	Cloudy	Normal School.
Bourg-en-Bresse	29.13	740.0	30.05	763.3	66.7	19.3	54	S			8		5k		S	0	0	Cloudy	Normal School.
Bourges, Normal School	29.49	749.0	30.03	762.7	63.7	17.6	68	WSW			4		5		WSW	0.031	0.8	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.32	744.6	29.54	750.2	56.3	13.5	84	WSW			5		9		WSW	0.315	8.00	Squally	The Staff.
Carcassonne, Normal School	29.58	751.4	29.99	761.7	64.0	17.8	72	E			2		10		E	0	0	Covered	Vateau, Director.
Caen	29.47	748.5	29.54	750.3	59.0	15	87	NE			6		10		NE	0.04	1.	Covered	Normal School.
Chartres, Normal School	29.15	740.5	29.71	754.6	59.4	15.2	87	SW			4		10			0.20	5.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.49	749.0	29.80	757.0	59.0	15.0	78	S			4		8cn		S	0.197	5.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.52	724 5	29.83	757.6	69.8	21.0	35	SW			1		8			0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.01	736.9	29.88	758.9	56.3	13.5	86	S			4		5n		S	0.102	2.6	Cloudy	Dr. Goulet, Director.
Commune de Gréasque*	29.02	737.2	30.17	766 2	55.9	13.3	93	NE			2		10		SW	0.071	1.8	Rainy	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.57	751.0	29.78	756.3	59.0	15	91	SW			6		10			0.47	12.	Covered	Mouillot, Director.
Le Mans, Normal School	29.41	747.0	29.71	754.7	57.9	14.4	91	SW			4		8		SW	0.187	4.75	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.04	737.5	29.93	760.1	66.9	19.4	54	SW			8		5		NE	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.56	750.9	29.66	753.4	60.8	16.0	69	SW			6		10			0.898	22.8	Covered	T. Carré, Director.
Mâcon, Normal School	29.28	743.7	29.96	760.9	62.4	16.9	83	W			2		5		SW	0	0	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.95	735.3	29.98	761.5	61.0	16.1	67	SW			2		10		NE	0	0	Covered	Normal School
Nismes, Normal School	30.02	762.5	30.23	767.7	62.6	17	82	S			4		5		N	0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.38	746.3	29.76	755.9	58.3	14.6	89	S			3		8		SSW	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.50	749.4	29.74	755.4	59.0	15.5	77	S			3		10kn		SW	0.011	0.27	Rainy	National Observatory.
Privas	29.00	736.7	30.07	763.8	57.2	14	80	NW			4		10		NE	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.23‡	767.7‡	29.86	758.5	61.2	16.2	81	SSW			5		10		SW	0.67	17.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.56	750.7	29.64	752.9	57.6	14.2	87	SW			2		10		SW	0.169	4.3	Covered	F. Lucard, Director.
Tarbes, Normal School	29.01	736.9	30.08	763.9	64.4	18	86	ENE			1		2		W	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.29	744.0	29.99	761.8	67.8	19.9	74	SSE			4		5		Calm	0	0	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.83	757.6	29.85	758.3	80.6	27										3 94	100.		L'Abbé Marchesi.
Marseilles, Observatory			30.11	764.7	66.0	18.9	76	SSW			3		10			0.055	1.40	Raining	The Staff.
Mont-Louis	24.89	632.2	30.21	767.2	53.8	12.1	49	SSW	26.1	11.67			5		SW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.46	748.3	29.74	755.3	66.4	19.1	79	SSW			4		10		SSW	0.020	0.5	Sprinkling	Marié Davy, Director.
Perpignan			29.96	761.0	62.2	16.8	73	E	5.6	2.50			6		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.24	539.4			35.6	2.0		SW			4		4					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.50	571.5			41.0	5.0		SW			4–6		5			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.58	751.3	29.74	755.5	59.0	15 0	83	SSW			3		10			0.063	1.6		E. Renou.
Toulouse, Observatory	29.27	743.5	30.09	761.9	64.4	18.0	72	SSE			3		3			0	0		The Staff.
Tours	29.59	751.6	29.79	756.6	63.1	17.3	76	SW			3		8		WSW	0.047	1.2		C. Marquet.
Versailles, (near Paris)			29.74	755.5	59.0	15.0	85	SW			3		10			0.024	0.60	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.22	767.5	30.24	768.1	55.6	13.1	83	WSW	2.5	1.1			10kn			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferraud, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,369 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône. †Observation not simultaneous. ‡Probably 29.83 in., and 757.7 mm.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.71	754.6	29.88	758.9	59.4	15.2	69	S			2		7			0	0		Prof. Arndt.
Breslau	29.50	749.2	30.03	762.7	56.8	13.8	56	S			3		8			0	0		Royal University Obs'y.
Carlsruhe	29.45	748.1	29.87	758.7	65.1	18.4	60	SW			2		7			0.094	2.4		Albert Senz.
Cassel	29.30	744.2	29.91	759.6	57.2	14.0	96	SSW			2		8	S		0.020	0.50		Dr. H. Möhl.
Crefeld	29.56	750.7	29.72	754.8	62.2	16.8	72	S			3		9			0.04	1.		Director Lose.
Emden	29.66	753.4	29.70	754.3	55.8	13.2	93	SSE			2		10			0	0		Prof. Prestel.
Frankfort on the Main	29.58	751.3	29.95	760.6	56.1	13.4	74	SSW			0		10			0.008	0.2		Physical Society.
Friedrichshafen	28.57	725.7	30.02	762.4	51.1	10.6	62	SW					5	W		0	0		M. Wilhelm.
Hamburg	29.71	754.7	29.78	756.5	56.8	13.8	81	S			3		7k	SSW		0.024	0.6	Pleasant	Captain F. Hegemann.
Kiel	29.75	755.7	29.77	756.1	53.2	11.8	76	SW			2		2			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.78	756.4	29.85	758.2	54.5	12.5	78	SW										Clear	Prof. E. Luther.
Köslin			29.83	757.6	53.6	12.0		Calm			0		4			0	0		H. Müller.
Leipsic, Observatory	29.52	749.9	29.94	760.5	61.7	16.5	66	SW			3		9	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.78	756.3	29.82	757.5	50.9	10.5	88	SW			5		10cs					Dust-haze	Reinbrechtvon Skalweit.
Neufahrwasser	29.85	758.1	29.86	758.5	58.3	14.6	72	WSW			3		7			0	0		A. Lothes.
Posen	29.69	754.1	29.98	761.5	60.6	15.9	59	N			2		2			0.020	0.5	Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.45	748.0	29.99	761.7	65.3	18.5	56	S			3		9	SW		0.022	0.57		Dr. Schur.
Stuttgart	28.99	736.4	29.91	759.7	65.3	18.5	47	SW			2		5	W		0	0		Prof. Schoder.
Treves, (Trier)	29.22	742.2	29.74	755.3	57.7	14.3	86	SSW			6		10			0.426	10.83	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.47	723.0	29.95	760.8	59.7	15.4	57	S			2		5cs	SSW		0	0		Dr. Von Bebber.
Wustrow, Naval School	29.86	758.4	29.90	759.4	51.6	10.9	91	SW			2		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.73	755.1	30.12	765.0	63.1	17.3		N			Strong							Clear	D. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.87	758.7	29.92	760.0	80.1	26.7	57	W	17.0?	7.6?			0			0	0	Blue sky	
Deesa	29.45	748.0	29.92	760.0	84.0	28.9	24	Calm								0	0	Blue sky	
Bombay	29.81	757.1	29.44	758.0	84.1	28.9	69	NNW	11.0	4.9			4	WNW		0	0	Misty	
Poona	27.84	707.0	29.83	757.7	81.0	27.2	60	W					3			0	0	D. clouds	
Lahore	29.19	741.4	29.94	760.5	74.8	23.8	37	Calm	1.0	0.4						0	0		
Belgaum	27.35	694.8	29.92	760.0	71.0	21.7	87	E	1.0	0.4			9			0	0	D. clouds	
Bangalore																			
Roorkee	28.99	736.3	29.90	759.4	75.8	24.3	35	Calm	1.2	0.5						0	0		
Agra	29.33	744.9	29.90	759.3	78.3	25.7	41	N								0	0		
Trichinopoly																			
Nagpur	28.82	732.1	29.87	758.6	79.6	26.4	74	Calm	1.0	0.4			9			0	0	Gloomy	
Madras																			
Lucknow	29.52	749.8	29.90	759.4	77.3	25.2	42	NE	1.3	0.6						0	0	Blue sky	
Allahabad	29.57	751.1	29.88	759.1	76.5	24.7	47	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.70	754.4	29.88	759.1	76.9	24.9	48	W	0.9	0.4			2	W	W	0	0		
Hazaribagh	27.88	708.2	29.92	760.0	73.0	22.8	43	NNW	5.8	2.6			1			0	0		
Cuttack	29.82	757.5	29.90	759.6	81.3	27.4	72	NNE	4.8	2.2			4			0.41	10.4	D. clouds	
Calcutta (Alipore)	29.87	758.8	29.90	759.3	79.7	26.5	70	NE	2.0	0.9			2			0	0	D. clouds	
Goalpara	29.48	748.9	29.88	758.9	77.4	25.2	62	WNW	2.3	1.0			0			0	0	Blue sky	
Chittagong	29.80	757.0	29.90	759.4	77.5	25.3	86	Calm	0.2	0.1			0			0	0	Blue sky	
Sibsagar	29.60	751.9	29.94	760.6	72.3	22.4	78	E	1.0	0.4			9	SW		0	0	D. clouds	
Rangoon																			
Jubbulpore	28.52	724.4	29.88	759.0	81.9	27.7	69	NE	2.7	1.2			2	E		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Valdobbia	22.26	565.3	30.13	765.4	36.3	2.4	55	WNW			1		6	NW		0	0		Ab. Dom. Mongini.
Stelvio	22.24	564.8	30.17	766.3	37.9	3.3		WSW			1		5	NNE		0	0		Signora Ernesta Manfredi.
Udine	29.70	754.3	30.11	764.9	58.6	14.8	23	SW	0.7	0.3			5			0	0		Prof. Giovanni Clodig.
Padua	29.99	761.7	30.10	764.5	58.8	14.9	34	NNE	0.7	0.3			4			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.90	759.5	30.10	764.5	60.6	15.9	28	S	0.7	0.3			3	W		0	0		Conte Alm. Da Schio.
Verona	29.90	759.4	30.12	765.1	64.8	18.2	66	E	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo	28.81	731.7	30.13	765.4	57.9	14.4	51	SW			1		4			0	0		Prof. Trionfini Carlo.
Domodossola	29.10	739.0	30.14	765.5	51.8	11.0	66	Calm			0		2			0	0		Prof. Giuseppe Calza
Milan	29.63	752.6	30.16	766.1	54.7	12.6		NW			2		1			0	0		Ab. Gio. Capelli.
Pavia	29.77	756.2	30.12	765.1	57.4	14.1	57	N			1		7			0	0		Prof. Gio. Cantoni.
Moncalieri	29.23	742.4	30.15	765.9	54.7	12.6	50	NE	0	0			9			0	0		Prof. P. F. Denza.
Mondovi	28.19	716.0	30.12	765.1	58.3	14.6	36	NNW			4		5	NW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.93	760.2	30.15	765.9	61.3	16.3	75	SW			2		9	W		0	0		Prof. L. Vassallo.
Genoa	29.95	760.8	30.12	765.1	62.2	16.8	62	SE	6.3	2.8			10	S		0	0		Prof. G. M. Garibaldi
Placenza	29.88	758.9	30.13	765.4	57.2	14.0	45	NW	3.1	1.4			4			0	0		Dott. G. Manzi.
Parma	29.78	756.5	30.12	765.0	61.9	16.6	38	NNW			2		2			0	0		Prof. P. Pigorini.
Florence	29.91	759.6	30.17	766.2	60.8	16.0	62	N			2		1			0	0		Cav. F. Meucci.
Leghorn	30.08	764.0	30.17	766.2	50.9	10.5	78	ENE	1.3	0.6			2			0	0		Prof. P. Monte.
Siena	28.93	734.8	30.19	766.7	61.5	16.4	49	NW	1.8	0.8			2	W		0	0		Prof. L. Toscani.
Urbino	28.61	726.6	30.18	766.6	56.5	13.6	55	N			2		0			0	0		Prof. P. Serpieri.
Pesaro	30.10	764.5	30.15	765.8	54.5	12.5	66	NE	23.0	10.3			2			0	0		Prof. Luigi Guidi.
Ancona	30.03	762.8	30.14	765.5	58.6	14.8	65	N			4		0			0	0		Prof. F. DeBosis.
Grosseto	30.09	764.2	30.20	767.1	67.3	19.6	41	SSW			2		3	SE		0	0		Avv. P. Ponticelli.
Rome	29.97	761.1	30.14	765.6	64.8	18.2	38	N	0	0			0			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.98	761.4	30.18	766.5	66.0	18.9	37	SSE			4		1			0	0		Prof. L. Palmieri.
Lecce					63.5	17.5	45	N	11.9	5.3			4	N		0	0		Prof. C. De Giorgi.
Cosenza	29.27	743.5	30.17	766.2	61.9	16.6	77	NE	0.7	0.3			0			0	0		Prof. F. D. Conti.
Cagliari	29.87	758.7	30.06	763.5	66.4	19.1		S			2		2	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	30.09	764.3	30.14	765.5	65.7	18.7	65	SE			2		9			0	0		Prof. F. Caffero.
Palermo	29.84	757.8	30.09	764.3	64.0	17.8	54	NNE	4.9	2.2			1			0	0		Prof. G. Cacciatore.
Caltanissetta	28.13	714.6	30.07	763.8	61.5	16.4	55	WNW			1		2			0	0		Prof. A. Pagani.
Syracuse	30.01	762.3	30.09	764.2	64.8	18.2	62	NE			4		3	ENE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.63	752.6	30.19	766.7	64.4	18.0	32	SW	0.7	0.3			3			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.74	755.4	29.84	757.9	56.3	13.5	87	NW	2	0.9						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.17	588.4	30.22	767.6	53.4	11.9	92	NW	0.2	0.09		0	2ks			Inap.	Inap.	Clear	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.61	752.1	29.61	752.1	57.6	14.2		S			4					0.028	0.7		
Groningen	29.64	752.8	29.69	754.2				S			2					0.039	1.0		
Helder	29.61	752.0	29.61	752.0	54.3	12.4		SE			2					0.232	5.9		
Hellevoetsluis			29.62	752.3	56.8	13.8	91	SE			4								
Utrecht	29.61	752.2	29.66	753.4	57.4	14.1	91	SSE			4		10			0.201	5.1	Overcast	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.27	743.5	29.33	744.9	47.8	8.8	84	SSW	22.8	10.2			5			0.197	5.0	Raining	
Brönö	28.95	735.4	28.99	736.4	34.5	1.4	85	NE	18	8			10			0	0		
Christiania	29.15	740.5	29.30	744.2	50.4	10.2	60	SW	13	6			10			0.252	6.4		
Tromsö	29.19	741.5	29.24	742.6	20.1	— 6.6	73	NE	4	2			0			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.17	766.2	30.35	771.0	64.2	17.9	84	NNE	3.1	1.4			2			0	0		Dr. J. A. Sampaio
Campo Major	29.14	740.1	30.15	765.9	65.8	18.8	55	WNW	4.9	2.2			5			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.18	766.6	30.25	768.4	75.0	23.9	62	SE	3.8	1.7			6			0.520	13.2		Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	756.9	30.16	766.0	64.9	18.3	70	SW	16.1	7.2			4	WNW		0	0		The Staff.
Ponta Delgada, (Azores)	30.28	769.2	30.35	771.0	66.9	19.4	65	NE	4.3	1.9			6			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell: Height scale 0–9	Sea or swell: Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.58	751.3	30.00	762.0	54.7	12.6	64	S	9	4			10						Astronomical Obs.
Wilna	29.52	749.8	29.94	760.5	48.9	9.4	89	S	4	2			10					Foggy	Astronomical Obs.
Dorpat	29.43	747.5	29.67	753.7	49.3	9.6	94	SW	11	5			10						Prof. Dr. Weihrauch
St. Petersburg	29.58	751.4	29.60	751.8	43.5	6.4	92	SW	13	6			10						Central Physical Obs.
Knopio	29.02	737.2	29.35	745.5	35.8	2.1	100	S	18	8			10					Rain & fog.	Ch. Forsten.
Kieff	29.52	749.7	30.15	765.9	54.3	12.4	59	SSW	7	3			1						Physical Cabinet.
Nikolaiev	30.28	769.2	30.35	771.0	54.7	12.6	52	S	4	2			0						Kurdakof.
Kertch	30.34	770.6	30.36	771.1	53.6	12.0	72	ENE	4	2			4						Lagorio.
Moscow	29.48	748.8	30.05	763.3	34.9	1.6	89	S	9	4			10						Meteorological Obs.
Lugan	30.17	766.4	30.38	771.7	44.6	7.0	47	SSW	2	1			1						Meteorological Obs.
Archangel	29.61	752.1	29.63	752.6	29.5	— 1.4	88	SSE	9	4			10						Ogorodnikof.
Tiflis	28.86	733.1	30.28	769.1	60.8	16.0	65	SE	4	2			10						Physical Observatory.
Astrakhan	30.54	775.6	30.45	773.5	44.2	6.8	37	N	7	3			9						Sebastianof.
Kasan	29.88	758.9	30.16	766.1	33.6	0.9	58	W	2	1			9						Physical Cabinet.
Orenburg	30.02	762.6	30.42	772.6	34.3	1.3		SE	9	4			0						Tschernischet.
Ekaterinburg	28.97	735.8	29.94	760.5	35.1	1.7	70	NW	4	2			10						Meteorological Obs.
Nukuss	29.95	760.7	30.18	766.6	55.6	13.1	75	N	9	4			2						
Kasaly																			Bobrof.
Tashkend	28.54	724.9	30.28	769.0	50.9	10.5	90	Calm	0	0			5					Foggy	Michelson.
Barnaul	29.65	753.0	30.18	766.5	44.4	6.9	63	Calm	0	0			0						Meteorological Obs.
Yeniseisk	30.08	764.1	30.23	767.8	39.7	4.3	87	Calm	0	0			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.14	765.5	30.28	769.1	40.1	4.5	32	WNW	27	12			8						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					33.3	0.7	90	Calm	0	0			7						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.86	707.7	30.06	763.4	64.6	18.1	58	SW	9.7	4.34		1	6	N		0	0	Clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.01	762.4	30.10	764.4	80.2	26.8	72	NNE	7.6	3.4		1cs	6k;ks		NE	0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.07	763.8	30.17	766.2	71.2	21.8	70	SSE	11.9	5.3		0	3		S	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.93	760.3	83.8	28.8	86	E				6n	4kn	SE	SE	0.492	12.50	Clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published: wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.25	742.9	29.29	743.9	30.2	—1.0	.....	E	.....	.....	2	.....	4	.....	.....	0	0	.....	
Umea	29.00	736.5	29.05	737.8	37.4	3.0	100	S	.....	.....	2	.....	10	.....	.....	0.165	4.2	Raining	
Hernosand	28.96	735.6	29.01	736.9	41.0	5.0	97	SSW	.....	.....	2	.....	9	.....	.....	0.083	2.1	Rain & snow	
Stockholm	29.23	742.4	29.41	746.9	50.4	10.2	94	SSW	.....	.....	6	.....	3	.....	.....	0.031	0.8	Raining	
Wisby	29.55	750.5	29.61	752.0	50.0	10.0	46	W	.....	.....	7	.....	10	.....	.....	0.217	5.5	.....	
Sub-Series.																			
Upsala	29.27	743.4	29.34	745.3	49.5	9.7	65	SW	15.2	6.8	.....	.....	9	.....	W	0.046	1.17	.....	Dr. Hildebrandsson.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.57	725.6	29.96	760.9	67.1	19.5	36	SSW	.....	.....	2	.....	6	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.37	720.6	29.99	761.8	58.6	14.8	55	SW	.....	.....	1	.....	2	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—For Geneva the corresponding departures from the normal values are: Barometer, —0.5 mm; Thermometer, +8.2 cent.; Relative Humidity, —37 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 476 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.17	766.3	59.7	15.4	64	NE	11	5.0	.....	.....	1	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.23	767.8	63.0	17.2	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	30.13	765.4	65.1	18.4	.....	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'ry	29.86	758.4	29.98	761.6	71.8	22.1	69	S	.....	.....	2	.....	10n	.....	S	.....	.....	Showery	Prof. C. V. A. Van Dyck

NOTE.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Brockville, Ontario	.....	.....	29.83	757.7	44	6.7	.....	SW	1	0.4	.....	.....	10s	.....	SW	0.04	1.0	Light rain	Hon. J. Ferguson.
*Chatham, N. B.	.....	.....	29.64	752.8	33	0.6	89	S	5	2.2	.....	2ck	2ks	W	W	0.10	2.5	Fair	W. R. Bigg.
Charlottetown, P. E. Island.	.....	.....	29.68	753.9	38	3.3	73	W	3	1.3	.....	0	0	.....	.....	0.180	4.57	Clear	G. A. Blair.
Cornwall, Ontario	29.58	751.3	29.77	756.1	45.2	7.3	78	SW	.....	.....	3	.....	10s	.....	.....	0.055	1.46	Cloudy	H. J. Cundall, C. E.
Dalhousie, N. B.	29.57	751.1	29.60	751.8	30.6	— 1.1	90	W	.....	.....	1	.....	.....	.....	.....	0	0	Overcast	James Smith, M. A.
Esquimault, B. C.	29.73	755.1	29.77	756.1	47.3	8.5	100	Calm	.....	.....	.....	.....	10	.....	.....	0.08	2.0	Hazy	H. A. Johnson.
*Father Point, Quebec	.....	.....	29.57	751.1	36	2.2	71	SW	30	13.4	.....	2cs	5s	W	W	0	0	Fair	W. H. Bevis.
Fredericton, N. B.	29.68	753.9	29.75	755.6	35	1.7	80	W	4	1.8	.....	5ck	0	W	.....	0.15	3.8	Fair	J. McWilliams.
*Fort Garry, Manitoba	.....	.....	29.82	757.4	26	— 3.3	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
Goderich, Ontario	29.13	739.9	29.92	760.0	52.1	11.2	90	SW	.....	.....	3	0	0	.....	.....	0	0	Fine	James Stewart.
Granton, Ontario	28.81	731.8	29.93	760.2	41	5.0	91	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	H. J. Strang, M. A
*Halifax, N. S.	29.59	751.6	29.72	754.9	39	3.9	86	W	7	3.1	.....	0	0	.....	.....	0.672	17.07	Clear	James Grant.
Hamilton, Ontario	29.55	750.6	29.93	760.2	46.9	8.3	70	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Heart's Content, N. F.	29.05	737.9	29.07	738.4	42	5.6	91	NE	.....	.....	1	.....	10n	.....	.....	0.79	20.1	Overcast	Geo. Dickson, M. A
*Kingston, Ontario	29.52	749.8	29.88	758.9	50	10.0	76	W	4	1.8	.....	5k	2ks	W	W	0	0	Cloudy	E. Weedon.
*Montreal, Quebec	29.58	751.3	29.78	756.4	44	6.7	84	W	6	2.7	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	S. Woods, M. A
*Parry Sound, Ontario	29.14	740.1	29.84	757.9	43	6.1	79	N	7	3.1	.....	2ck	5ks	W	W	0	0	Fair	C. H. McLeod, C. E.
Peterboro, Ontario	29.14	740.1	29.89	759.2	45.9	7.7	80	NW	.....	.....	1	5k	0	.....	.....	0	0	Fair	Rev. R. Mosley
Port Dover, Ontario	29.23	742.4	29.92	760.0	50	10.0	79	SW	11	4.9	.....	0	0	.....	.....	0	0	Clear	J. F. Jeffers, B. A.
Port Hastings, N. S.	29.56	750.8	29.61	752.1	30.9	— 0.6	.....	NW	9	4.0	.....	.....	.....	.....	.....	0.80	20.3	Fine	H. Morgan.
Port Stanley, Ontario	29.28	743.7	29.93	760.2	48	8.9	82	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	Peter Grant.
*Quebec, Quebec	29.38	746.2	29.71	754.6	39	3.9	64	W	9	4.0	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Rockliffe, Ontario	29.40	746.7	29.87	758.7	36	2.2	75	NW	4	1.8	.....	5c	2s	NW	NW	0.04	1.0	Fair	Capt. Ashe, R. N
St. John, N. B.	29.63	752.6	29.80	756.9	35	1.7	90	W	5	2.2	.....	0	0	.....	.....	0	0	.....	W. H. McIntyre.
*Saugeen, Ontario	29.13	739.9	29.82	757.4	51	10.6	85	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
Stayner, Ontario	.....	.....	29.82	757.4	48	8.9	89	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
Stratford, Ontario	28.91	726.7	29.91	759.7	40.6	4.8	94	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
*Sydney, C. B.	29.52	749.8	29.55	750.6	42	5.6	76	NW	12	5.4	.....	2k	8ks	NW	NW	0.90	22.9	Clearing	C. J. MacGregor, M. A.
*Toronto, Ontario	29.49	749.0	29.88	758.9	38	3.3	89	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	T. C. Hill.
Windsor, N. S.	29.64	752.8	29.73	755.1	40.8	4.9	82	W	1	0.4	.....	2c	0	.....	.....	0.50	12.7	Clear	Magnetic Observatory.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			J. Montgomery.
St. Johns, Newfoundland	.....	.....	.....	.....	47.0	8.3	96	SW	.....	.....	.....	.....	10ns	.....	.....	1.15	29.2	Cloudy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.69	754.1	29.92	760.0	37	2.8	80	S	7	3.1		2s	0	Calm		0.31	7.9	Clear	
Alpena, Michigan	29.19	741.4	29.84	757.9	38	3.3	90	NW	3	1.3		0	0			0	0	Clear	
Atlantic City, New Jersey	30.10	764.5	30.12	765.0	47	8.3	77	W	6	2.7		0	0			0.07	1.8	Clear	
Augusta, Georgia	30.05	763.3	30.24	768.1	50	10.0	72	Calm	0	0		0	Hz; sm'		Calm; NW	0	0	Hazy	
Baltimore, Maryland	30.09	764.3	30.14	765.5	45	7.2	68	NW	4	1.8		0	Sm'e		Calm	0	0	Clear	
Barnegat, New Jersey	30.07	763.8	30.09	764.3	46	7.8	76	W	13	5.8		0	0			0.05	1.3	Clear	
Bismarck, Dakota	27.94	709.7	29.62	752.3	37	2.8	62	N	2	0.9		10cs	Sm'e	SE	Calm	0	0	Cloudy	
Boise City, Idaho	27.09	688.1	29.70	754.4	43	6.1	58	S	4	1.8		5k	0	S		0	0	Fair	
Boston, Massachusetts	29.77	756.1	29.93	760.2	44	6.7	52	SW	12	5.4		1cs	0			0.21	5.3	Clear	
Brackettville, Texas	28.96	735.6	30.00	762.0	53	11.7	48	E	1	0.4		0	0			0	0	Clear	
Breckenridge, Minnesota	28.73	729.7	29.75	755.6	29	— 1.7	89	W	4	1.8		8k	0	W		0	0	Cloudy	
Brownsville, Texas	30.11	764.8	30.18	766.6	57	13.9	87	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.19	741.4	29.88	758.9	53.0	11.7	86	SW	16	7.2		0	8s		SW	0	0	Fair	
Burlington, Vermont	29.56	750.8	29.82	757.4	43	6.1	59	S	7	3.1			10n		S	0.02	0.5	Light rain	
Cairo, Illinois	29.85	758.2	30.26	768.6	45	7.2	92	SE	2	0.9			Fog		Calm	0	0	Foggy	
Camp Grant, Arizona																			
Camp Verde, Arizona																			
Campo, California																			
Cape Hatteras, N. Carolina	30.11	764.8	30.12	765.0	57	13.9	57	NE	4	1.8		0	0			0	0	Clear	
Cape Henry, Virginia	30.12	765.0	30.15	765.8	57	13.9	57	N	5	2.2		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.17	766.3	30.18	766.6	56	13.3	68	N	10	4.5		0	0			0	0	Clear	
Cape May, New Jersey	30.11	764.8	30.14	765.5	52	11.1	64	W	18	8.0		0	0			0	0	Clear	
Charleston, South Carolina	30.14	765.5	30.21	767.3	55	12.8	68	N	9	4.0		0	0			0	0	Clear	
Cheyenne, Wyoming	23.95	608.3	29.89	759.2	35	1.7	69	W	8	3.6		2c	0	Calm		0	0	Fair	
Chicago, Illinois	29.30	744.2	30.00	762.0	48	8.9	70	SW	12	5.4		0	Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.50	749.3	30.15	765.8	46	7.8	76	SE	2	0.9			Fog		SE	0	0	Foggy	
Cleveland, Ohio	29.33	745.0	30.06	763.5	48	8.9	62	S	16	7.2		0	0			0	0	Clear	
Concho, Texas					41	5.0	73	W	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.72	754.9	30.20	767.1	43	6.1	91	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.40	746.7	30.05	763.3	48	8.9	77	SW	5	2.2		1cs	Sm'e	SW	Calm	0	0	Clear	
Denison, Texas	29.38	746.2	30.20	767.1	45	7.2	84	S	10	4.5		2c	0	NW		0	0	Fair	
Denver, Colorado	24.71	627.6	29.93	760.2	40	4.4	56	SE	8	3.6			8s		Calm	0	0	Cloudy	
Detroit, Michigan	29.28	743.7	29.94	760.5	48	8.9	70	SW	7	3.1		0	Sm'e		Calm	0	0	Clear	
Dodge City, Kansas	27.27	692.6	29.56	750.8	43	6.1	75	S	10	4.5		2c	0	Calm		0	0	Clear	
Dubuque, Iowa	29.27	743.4	29.97	761.2	47	8.3	77	SW	7	3.1		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.11	739.4	29.78	756.4	46	7.8	92	SE	14	6.3			10s		NE	0	0	Threatening	
Eagle Pass, Texas	29.35	745.5	30.11	764.8	48	8.9	70	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.70	754.4	29.77	756.1	38	3.3	63	SW	6	2.7		5k	0	NW		0.41	10.4	Fair	
Erie, Pennsylvania	29.24	742.7	29.95	760.7	48	8.9	77	SW	14	6.3		0	Sm'e			0	0	Clear	
Escanaba, Michigan	29.17	740.9	29.82	757.4	39	3.9	91	N	6	2.7			Fog			0	0	Dense fog	
Florence, Arizona	28.35	720.1	29.95	760.7	60	15.6	44	W				8cs	0	W		0	0	Fair	
Fort Bayard, New Mexico	24.04	610.6	30.04	763.0	45	7.2	24	NW	8	3.6		5cs	0	SW		0	0	Fair	
Fort Craig, New Mexico	25.51	647.9			42	5.6	74	N	4	1.8		0	5s		N	0	0	Fair	
Fort Gibson, Indian Ter	29.59	751.6	30.15	765.8	41	5.0	91	SE	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.82	732.0	30.14	765.5	41	5.0	82	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.86	733.0	30.00	762.0	40	4.4	91	S	1	0.4		2k	0	W		0	0	Clear	
Fort Sully, Dakota	28.06	712.7	29.74	755.4	34	1.1	79	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	30.17	766.3	30.21	767.3	59	15.0	87	NE	4	1.8		2k	0	E		0	0	Fair	
Grand Haven, Michigan	29.28	743.7	29.92	760.0	55	12.8	74	SW	20	8.9		0	0			0	0	Clear	
Indianapolis, Indiana	29.34	745.2	30.13	765.3	48	8.9	77	SW	4	1.8		0	Sm'e			0	0	Clear	
Indianola, Texas	30.17	766.3	30.20	767.1	62	16.7	83	E	11	4.9		2k	0	Calm		0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.17	766.3	30.20	767.1	54	12.2	73	NW	6	2.7		0	0			0	0	Clear	
Keokuk, Iowa	29.50	749.3	30.03	762.7	48	8.9	71	SW	8	3.6		0	Haze		Calm	0	0	Clear	
Key West, Florida	30.06	763.5	30.10	764.5	75.0	23.9	69	N	12	5.4		5cs; k	0	Calm; N		0	0	Fair	
Kittyhawk, North Carolina	30.16	766.1	30.19	766.8	52	11.1	86	N	8	3.6		0	0			0	0	Clear	
Knoxville, Tennessee	29.24	742.7	30.29	769.4	37	2.8	90	NE	1	0.4		0	Sm'e			0	0	Smoky	
La Crosse, Wisconsin	29.14	740.1	29.83	758.4	54	12.2	61	S	8	3.6		0	0			0	0	Clear	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	41	5.0	57	Calm	0	0		5c	0	Calm		0	0	Fair	
Laredo, Texas					54	12.2	86	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	29.17	740.9	30.03	762.7	44	6.7	84	S	6	2.7		0	0			0	0	Clear	
Los Angeles, California	29.64	752.8	29.97	761.2	58	14.4	81	N	4	1.8		0	2s		N	0	0	Clear	
Louisville, Kentucky	29.63	752.6	30.20	767.1	47	8.3	85	S	3	1.3		Haze	Fog	Calm	S	0	0	Fair	
Lynchburg, Virginia	29.50	749.3	30.19	766.8	49	9.4	57	S	2	0.9		0	0			0	0	Clear	
Maricopa Wells, Arizona					42	5.6	35	N				0	0			0	0	Clear	
Marquette, Michigan	29.09	738.9	29.80	756.9	38	3.3	63	NW	8	3.6		0	0			0	0	Clear	
Mason, Texas	28.48	723.4	30.28	769.1	37	2.8	80	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.93	760.2	30.26	768.6	44	6.7	92	Calm	0	0			Fog		Calm	0	0	Foggy	
Milwaukee, Wisconsin	29.27	743.4	29.96	761.0	49	9.4	71	SW	17	7.6		0	Sm'e			0	0	Clear	
Mobile, Alabama	30.21	767.3	30.25	768.3	54	12.2	73	N	6	2.7			10s		NE	0	0	Cloudy	
Montgomery, Alabama	30.00	762.0	30.24	768.1	46.5	8.1	85	NW	3	1.3		0	Sm'e		NW	0	0	Clear	
Morgantown, West Virginia	29.11	739.4	30.19	766.8	46	7.8	69	SW	5	2.2		0	0			Inap.	Inap.	Clear	
Mt. Washington, N. H.	23.43	595.1	29.79	756.7	22	— 5.6	100	NW	36	16.1			Fog		NW	0.23	5.8	Foggy	
Nashville, Tennessee	29.73	755.1	30.29	769.4	41	5.0	91	Calm	0	0			Fog		Calm	0	0	Foggy	
New Haven, Connecticut	29.89	759.2	30.01	762.2	45	7.2	67	W	8	3.6		Haze	0			0.60	15.2	Clear	
New London, Connecticut	29.97	761.2	30.02	762.5	42	5.6	74	W	5	2.2		0	0			0.15	3.8	Clear	
New Orleans, Louisiana	30.17	766.3	30.23	767.8	58	14.4	66	NE	8	3.6		9k	0	E		0	0	Cloudy	
Newport, Rhode Island	29.95	760.7	30.00	762.0	45	7.2	54	SW	18	8.0		0	0			0.62	15.7	Clear	
New York, New York	29.88	758.9	30.06	763.5	43	6.1	67	SW	14	6.3		0	Fog			0.33	8.4	Clear	
Norfolk, Virginia	30.14	765.5	30.20	767.1	52	11.1	72	N	3	1.3		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	26.92	683.8	29.51	749.5	36	2.2	80	W	8	3.6		5ck	0	W		0	0	Fair	
Olympia, Washington Ter.	29.78	756.4	29.82	757.4	50	10.0	86	S	2	0.9		0	4s		SW	0.02	0.5	Fair	
Omaha, Nebraska	28.78	731.0	29.86	758.4	47	8.3	77	S	6	2.7		5c	0	W		0	0	Fair	
Oswego, New York	29.56	750.8	29.88	758.9	46	7.8	76	S	6	2.7		1k	0	NW		0	0	Clear	
Pembina, Dakota	28.96	735.6	29.82	757.4	23	— 5.0	86	NW	4	1.8		0	Fog		Calm	0	0	Foggy	
Philadelphia, Pennsylvania	30.07	763.8	30.12	765.0	44	6.7	84	SW	11	4.9		0	Fog		Calm	Inap.	Inap	Clear	
Phœnix, Arizona					62	16.7	32	E					10ks		SE	0	0	Cloudy	
Pike's Peak, Colorado	17.70	449.6	29.91	759.7	10	—12.2	40	W	30	13.4		0	8s		SW	0	0	Cloudy	
Pioche, Nevada	23.96	608.6	29.73	755.1	43	6.1	51	N	2	0.9			10s		Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.28	743.7	30.10	764.5	44	6.7	75	SW	7	3.1		0	0			0	0	Clear	
Port Huron, Michigan	29.24	742.7	29.90	759.4	45	7.2	84	SW	7	3.1		0	0			0	0	Clear	
Portland, Maine	29.78	756.4	29.84	757.9	39	3.9	72	SW	10	4.5		8k	Haze	W		0.06	1.5	Cloudy	
Portland, Oregon	29.84	757.9	29.93	760.2	51	10.6	93	Calm	0	0			10ks		S	0.08	2.0	Cloudy	
Prescott, Arizona	24.73	628.1	30.09	764.3	45	7.2	24	S				5c	0	S		0	0	Fair	
Punta Rassa, Florida	30.11	764.8	30.13	765.3	66	18.9	68	N	8	3.6		8cs	0	Calm		0	0	Cloudy	
Red Bluff, California	29.66	753.4	30.03	762.7	52	11.1	93	N	6	2.7		2c	0	Calm		0.88	22.4	Clear	
Rochester, New York	29.24	742.7	29.86	758.4	47	8.3	77	W	9	4.0		0	Haze		Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.39	746.5	29.96	761.0	47	8.3	96	Calm.	0	0		0	8s		W	0.22	5.6	Cloudy	
Sacramento, California	29.93	760.2	30.02	762.5	54	12.2	93	N	8	3.6			10s		SW	0.58	14.7	Cloudy	
St. Louis, Missouri	29.57	751.1	30.16	766.1	48	8.9	78	SW	6	2.7		0	Sm'e			0	0	Clear	
St. Marks, Florida	30.21	767.3	30.23	767.8	50	10.0	96	Calm	0	0		0	0			0	0	Clear	
St. Paul, Minnesota	28.92	734.6	29.74	755.4	44	6.7	67	SW	1	0.4		2c	Sm'e	Calm	Calm	0	0	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.56	649.2	29.89	759.2	45	7.2	45	N	4	1.8			10s		Calm	0	0	Cloudy	
San Antonio, Texas	29.47	748.5	30.08	764.0	47	8.3	92	NE	1	0.4		0	0			0	0	Clear	
San Diego, California	29.93	760.2	30.00	762.0	58	14.4	81	NE	3	1.3		2k	0	NW		0	0	Fair	
Sandusky, Ohio	29.36	745.7	30.04	763.0	48	8.9	71	SW	14	6.3		0	Sm'e		Calm	0	0	Clear	
Sandy Hook, New Jersey	30.03	762.7	30.05	763.3	48	8.9	70	W	21	9.4		0	Haze			0.08	2.0	Clear	
San Francisco, California	29.95	760.7	30.01	762.2	56	13.3	87	NE	10	4.5			10ks		NE	0.36	9.1	Cloudy	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	33.5	0.8	79	E	3	1.3		Haze	1s		Calm	0	0	Clear	
Savannah, Georgia	30.11	764.8	30.20	767.1	53	11.7	79	N	4	1.8		0	0			0	0	Clear	
Shreveport, Louisiana	30.03	762.7	30.26	768.6	43	6.1	100	S	2	0.9			Fog		Calm	0	0	Foggy	
Smithville, North Carolina	30.17	766.3	30.21	767.3	53	11.7	78	N	8	3.6		0	1ks		N	0	0	Clear	
Springfield, Massachusetts	29.78	756.4	29.91	759.7	39	3.9	72	S	4	1.8		0	0			0.50	12.7	Clear	
Stanwix, Arizona					62	16.7	83	W					10s		S	0	0	Cloudy	
Stockton, Texas	27.00	685.8	30.00	762.0	45	7.2	84	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	29.85	758.2	29.90	759.4	44	6.7	67	W	16	7.2		5ck	0	W		0.27	6.9	Fair	
Toledo, Ohio	29.34	745.2	30.02	762.5	48	8.9	77	SW	12	5.4		0	0			0	0	Clear	
Tucson, Arizona	27.57	700.3	30.12	765.0	68	20.0	52	Calm				5cs	0	Calm		0	0	Fair	
Tybee Island, Georgia	30.14	765.5	30.18	766.6	56	13.3	81	N	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.56	750.8			43	6.1	83	SE	6	2.7		8ck	0	W		0	0	Cloudy	
Vicksburg, Mississippi	30.03	762.7	30.30	769.6	46	7.8	100	N	1	0.4			Fog		Calm	0	0	Foggy	
Virginia City, Montana	24.17	613.9	29.65	753.1	32	0.0	79	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.63	752.6	30.00	762.0	52	11.1	86	Calm	0	0			10ks		NW	Inap.	Inap.	Cloudy	
Washington, D. C.	30.06	763.5	30.17	766.3	45	7.2	67	S	3	1.3		0	Sm'e		S	Inap.	Inap.	Clear	
Wickenburg, Arizona					48	8.9	37	S				0	8ks		Calm	0	0	Fair	
Wilmington, N. Carolina	30.13	765.3	30.21	767.3	50	10.0	78	NE	4	1.8		0	Fog		Calm	0	0	Clear	
Winnemucca, Nevada	25.60	650.2	29.96	761.0	44	6.7	75	SW	6	2.7			10ks		Calm	0	0	Threatening	
Wood's Holl, Mass	29.93	760.2	29.98	761.5	50	10.0	44	W	11	4.9		0	0			1.51	38.4	Clear	
Yankton, Dakota	28.53	724.6	29.83	757.7	40	4.4	86	SE	2	0.9		5c	0	W		0	0	Fair	
Yuma, Arizona	29.74	755.4	29.90	759.4	57	13.9	46	SW	4	1.8		8k		SW		0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.93	760.2	29.98	761.5	21.0	—6.1	93	W	8	3.6		1ck	3s	E	E	0.02	0.5	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	30.02	762.5	30.04	763.0	80	26.7	74	NE	2.4	1.1		4k	4ks	NE	NE	0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	81	27.2	82	Calm	0	0		5c	2s	SE	Calm	0	0		James Gall.
Navassa, W. I.	29.88	758.9	29.96	761.0	85	29.4		E			1					0	0	Clear	F. M Everett.
St. Thomas, W. I.					83	28.3	79	E	3	1.3		2c	8ks	NE		0.74	18.8	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.			30.00	762.0	83	28.3	79	E			2	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.24	641.1			66.2	19.0	87	Calm			0		10s;n			0.23	5.8	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.: Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.: Omaha, 1,054.6 ft., or 321.4 m.: Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fe, 6,362.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.99	761.7	57	13 9	56	13 3	81	ENE	3	1.3			8		Calm	0.17	4.3			Cloudy	
Navy Yard, Pensacola, Fla.	30.30	769.6			57	13.9	86	N	6	2.7			8			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	29.88	758.9	71	21.7	35	1.7	??	SW			1				NE	0.3	8.			Clear	
Naval Hospital, Yokohama, Japan	29.77	756 1	65.5	18.6	63	17.2	62	WSW			3		4cs		W	0	0			Fair	
Adams. Montevideo, Uruguay	30.16†	766.1†	56	13.3	55	12.8	93	NNW			4		0			0	0	None		Blue sky	
Alert. Oki Islands	30.04†	763.0†	61	16.1	61	16.1	55	SW			2–6		6		SW					D. clouds	
Alliance, Constantinople, Turkey.	30.25	768.3	63	17.2	65	18.3	58	NE			4		1		N&E					Pleasant	
Ashuelot. Tientsin, China	30.28	769.1	50	10.0	38	3 3	41	WNW			4		0					Smooth		Blue sky	
Canonicus, New Orleans, La.	30.20	767.1	46	7.8	58	14.4	70	NE			2		8		NE					Cloudy	
Colorado, New York, N. Y.	30.14	765.5	69	20.6	50	10.0	64	WSW	13	5.8			3		WSW	0.22	5.6			Fair	
Despatch, Constantinople, Turkey.	30.30	769.6	69	20.6	64	17.8	62	NE			3		2		Calm					Clear	
Franklin, Norfolk, Va.	30.28	769.1	51	10.6	51	10.6	??	NNW	6	2.7			1		NNW	0	0			Foggy	
Frolic, Washington, D. C.	30.22	767.6	53	11.7	48	8.9	78	SSW			3		0			0	0				
Gettysburg. Messina, Italy	29.96‡	761.0‡			74	23.3	100	NNE			1		2		Calm	0	0			D. clouds	
Kearsarge, N. 11° 51′ 30″, E. 53° 28′	29.94	760.5			84	28.9	96	NNE			1		1		N&E	0	0	Smooth		D. clouds	
Lackawana, Port Townsend, W. T.	29.80	756.9			56	13 3	75	SSE			2–4		6		N&W			Smooth		Squally	
Marion, Smyrna, Turkey	30.15	765.8	70	21.1	72	22.2	54	W			2		1		Calm	0	0	Smooth		D. clouds	
Michigan, Lake Huron	29.37	746.0	59	15.0	53	11.7	73	SW			3		0							Clear	
Monocacy, Yokohama, Japan	29.74	755 4	63	17.2	62	16.7	72	NNW			2		3		N&W	0	0	Smooth		Blue sky	
Monongahela, N. 36° 00′, W. 13° 38′	30.35	770.9	72	22.2	72	22.2	76	W			1		ks					Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.32	770 1			60	15.6	65	NNE	17	7.6			1		NW	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.04	763.0	65	18.3	56.5	13.6	97	NNW	3	1.3			10		N	0	0	Smooth		Foggy	
Onward, Callao, Peru	30.06	763.5†	70	21.1	67	19.4	89	SE			2		10					Long	W	D. clouds	
Ossinee, New York, N. Y.	30.08	764.0	70	21.1	47	8.3	77	WSW			3		0							Blue sky	
Palos, Shanghai, China	30.25	768.3	63	17.2	59	15.0	70	W			1–2		10		Calm					Overcast	
Pensacola, Mare Island, Cal.	30.12	765.0			56	13.3	??	N&E			0–1		9			0.165	4.19			Overcast	
Plymouth, Norfolk, Va.	30.47†	773.9†	59	15.0	53	11.7	73	NW			1		1							Clear	
Ranger, Shanghai, China	30.30	769.6			66	18.9	79	W			1		10		NW					Cloudy	
Rio Bravo. Brownsville, Texas	30.05	763 3			59	15.0	88	N			1		3		W					Hazy	
Santee, Annapolis, Md.	30.18	766.6	54	12.2	48	8.9	63	NW			1		1		NW	0	0			Clear	
St. Louis, League Island, Pa	30.00	762.0	46	7.8	46	7.8	84	SW	11	4.9			0			0	0			Clear.	
Swatara, New York, N. Y.	30.17	766 3			51	10.6	65	WSW			2									Blue sky	
Tennessee, Yokohama, Japan	29.85	758.2	67	19.4	55	12.8	??	Calm	0	0			2		Calm	0	0	Smooth		D. clouds	
Trenton, Villefranche, France	30.19†	766.8†	66	18.9	64	17.8	78	S	3	1.3			10		S	0.2	5.			Drizzling	
Vandalia, Villefranche, France.	30.18	766.6	62	16.7	61	16.1	88	WSW			0–1		10		W					D. clouds	
Wabash, Boston, Mass.	29.90	759.4	45	7.2	41	5.0	66	WSW	12	5.4			3		WSW	0.18	4.6			D. clouds	
Wyoming, Washington, D. C.					54	12.2		SSW			2		9							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.	Character.	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—				
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Hong Kong, China			30.25*	768.3*	74	23.3	90	ENE			4		10		SSE	Smooth		Misty	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic,																			Capt. John Metcalf.
S. S. Gaelic, N. 46° 00′, W. 168° 00′			29.31*	744.5*	52	11.1	100	NW			5		1k		W	Short	W	Squally	Capt. W. H. Kidley.
S. S. Oceanic, N. 31° 4′, E. 132° 32′			29.92	760.0	67	19.4	84	NNW			6		10		w&nw	dough	w&nw	Squally	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 44° 5′, W. 49° 23′	N68E	11.0	29.49	749.0	50.0	10.0	100	SSW			6		7k		SSW	Long		Fog & mist.	Capt. K. Undütsc.
S. S. Nürnberg, N. 43° 27′, W. 57° 51′			29.46	748.3	51.0	10.6	72	NW			7		10			Heavy	NW		Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 49° 14′, W. 43° 43′			30.13*	765.3*	50	10.0	??	SSW			2		10			Heavy	SW	Squally	Captain Sargent.
S. S. Ohio, Philadelphia, Pa.			30.06	763.5	62	16.7	88	E			2				W			Clear	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.31†	744.5†	52	11.1	93	S			4		10		S			Rainy	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 36° 43′, W. 75° 22′			30.18	766.6	59	15.0	59	N	5	2.2		0	0			Smooth		Clear	Capt. James Jorgensen.

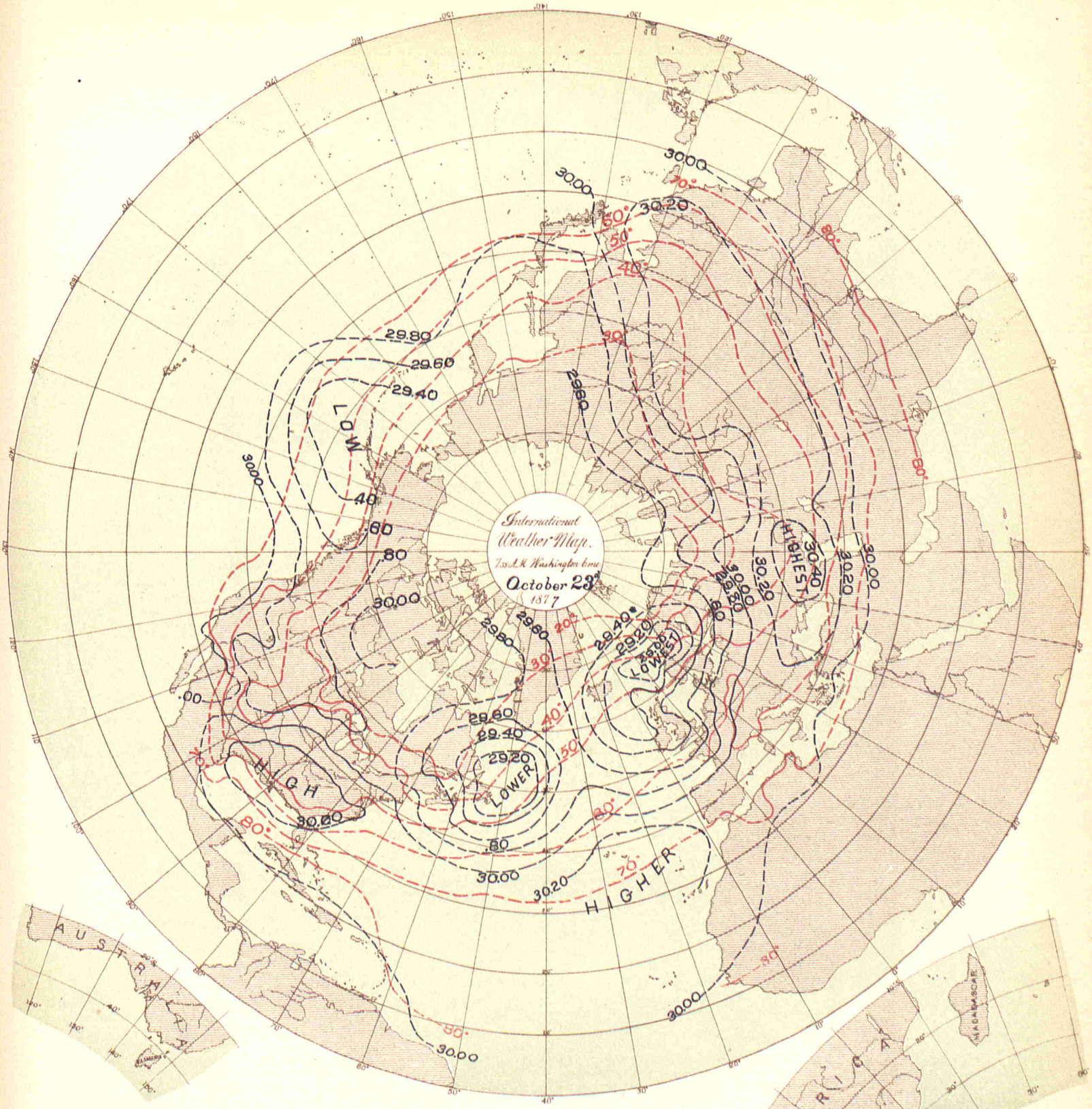
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 250 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 24, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.09	764.2	74.3	23.5	60	NW			2		2			0	0	Fair	Michel.
Algiers			29.95	760.6	70.9	21.6	65	SW			1		10			0	0	Covered	Peter.
La Calle			30.12	765.0	74.1	23.4	65	NW			2		3			0	0	Pretty fair	Fleury.
Tunis			29.90	759.5	72.0	22.2	56	N			3		6			0.165	4.2	Cloudy	Jacques.
Stax			30.00	762.0	71.6	22.0		NW			4		6			0	0	Cloudy	Husson.
Saida			30.09	764.2	59.4	15.2	76	NW			2		2			0	0	Fair	Millot.
Tebessa			30.00	762.0															Bourgeois.
Geriville			30.06	763.4	62.6	17.0	71	NW			5		5			0.118	3.0	Cloudy	Lemaillot.
Laghouat			30.04	762.9	73.4	23.0	31	W			4		4			0	0	Cloudy	François.
Biskra			30.02	762.4	76.1	24.5	53	Calm			0		8			0	0	Very cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.27	743.4	29.81	757.2	61.5	16.4	41	SW			1		2			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	28.98	736.2	29.74	755.3	59.0	15.0	43	NE			2		3			0	0		Dr. Wierzbiski.
Eperies	29.00	736.5	29.87	758.8	52.2	11.2	42	S			2		0			0	0		Julius Mikolik.
Gratz	28.50	723.9	29.75	755.6	52.5	11.4	60	S			1		8			0	0		Andreas Rospini.
Hermannstadt	28.50	724.0	29.91	759.8	57.9	14.4	36	SE			1		0			0	0		Prof. Reissenberger.
Kremsmünster	28.25	717.6	29.59	751.5	48.9	9.4	74	NE			2		3			0	0		Prof. C. Wagner.
Lemberg	28.87	733.2	29.85	758.2	52.9	11.6	65	S			2		1			0	0		Dr. T. Stanecki.
Pola	29.77	756.1	29.88	758.9	62.4	16.9	64	SSE			3		7?s			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.61	752.0	29.88	759.0	59.7	15.4	54	S			4		0			0	0		Karl Stancel.
Trieste	29.80	757.0	29.91	759.6	59.0	15.0	89	Calm			0		8			0	0		P. Busin.
Vienna	28.96	735.5	29.64	752.8	59.2	15.1	38	S			2		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.12	714.1	29.62	752.4	46.0	8.1	86	WNW			3		10			0.264	6.7		Prof. M. Passau.
Brussels	29.35	745.6	29.56	750.7	50.5	10.3	85	WSW			5	2	8	SW	WNW	0.400	10.15		Royal Observatory.
Furnes	29.56	750.8	29.58	751.4	51.3	10.7	65	WSW			4		6			0	0		M. E. de Cae.
Maeseyck	29.37	746.1	29.50	749.4	46.4	8.0	97	W			6		10			0.417	10.6	Raining	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.26	743.2	29.36	745.7	49.0	9.4		NW	9	4.0			2			0.020	0.51	Blue sky	W. Boswell.
Ardrossan	29.33	745.0	29.35	745.5	48	8.9		ESE			1		5					D. clouds	William McNeil.
Armagh, Observatory			29.31	744.5	47.3	8.5		S	10	4.5			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.42	747.3	52.0	11.1		WSW	8	3.6			4					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.33	745.0	51.8	11.0		SW			2		7					Showery	J. Dreyer.
Bradford, Yorkshire	28.99	736.3	29.38	746.2	50.1	10.1		N			4		2			0.55	14.0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	76	24.4		NE			1		8					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.50	749.3	54.0	12.2		SW			2		1					D. clouds	H. Todd. [H.C.
Cardington			29.52	749.8	52.0	11.1		SW			1		1					Blue sky	John McLaren.
Chatham, School M. E	29.43	747.5	29.56	750.8	54.2	12.3		SW			2		3					Blue sky	Lt.Col. C.M.Martin, R.E.
Dartmoor	28.13	714.5	29.60	751.8	46.2	7.9		W			6		7					Showery	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.31	744.5	29.34	745.2	45	7.2		SW			2		6					D. clouds	J. Mac Gowan.
Dover	29.55	750.6	29.58	751.3	52	11.1		W			4		3					¼ clouded	J. Costello.
Eccles, (near Manchester)			29.42	747.3	52.7	11.5		SW	4.8	2.1			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.35	745.5	29.58	751.3	52.9	11.6		SW			5		7					Overcast	The Staff.
Fort Napier, (Natal)	27.88	708.1	30.12	765.0	56.9	13.8		SE			3		10					Drizzling	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.98	761.5	82	27.8		W			1		4					D. clouds	
Galway, Queen's College					57	13.9		WSW			1		8					Gloomy	S. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.07	763.8	68.0	20.0		NW			4		5					D. clouds	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.16	740.7	29.36	745.7	45.8	7.7		NNW			1							Foggy	D. G. Maclean.
Great Yarmouth	29.46	748.3	29.46	748.3	50	10.0		W			3		3					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.39	746.5	29.56	750.8	52.3	11.3		WSW			4		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.44	747.8	29.66	753.4	53.5	11.9		WSW			3		8					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.61	752.1	57	13.9		SW			4		3ck			0.13	3.3	Showery	M. P. Moyle.
Holyhead	29.32	744.7	29.37	746.0	51	10.6		SW			3		10					Raining	John Tilston.
Jersey	29.42	747.3	29.71	754.6	53.5	11.9		WSW			6		8			Blank	Blank	Squally	J. Fisher.
Kew, Observatory			29.56	750.8	52.6	11.4		W	17	7.6			6					D. clouds	The Staff.
Kingstown	29.35	745.5	29.37	746.0	52	11.1		SW			2		7					D. clouds	George Mitchell.
Leicester, Museum			29.47	748.5	51.7	10.9		SW			1		6					D. clouds	Wm. J. Harrison, F.G.S
Malta, (Mediterranean)	29.92	760.0	29.99	761.7	67.2	19.6		NE			2		6					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.27	743.4	29.36	745.7	44	6.7		Calm			0		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.11	764.8	81.5	27.5		NE			2		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.27	743.4	29.46	748.3	53.1	11.7		SW			5		7k;d		W	0.037	0.94	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.96	735.6	29.48	748.8	49.0	9.4		SW			3		9					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.53	750.0	52	11.1		WSW			2		9					Threatening	F. Lucas
Plymouth	29.51	749.5	29.58	751.3	53.0	11.7		WSW			4		10					Raining	John Merrifield.
Roche's Point	29.37	746.0	29.41	747.0	54	12.2		W			4		5					½ clouded	W. Kennedy.
Saint Ann's Head	29.27	743.4	29.43	747.5	52	11.1		SW			5		7					Squally	John C. Walker.
Sandwick Manse, (Orkneys)			29.38	746.2	46.4	8.0		NE	6	2.7			2					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.95	760.7	57.8	14.3		ENE			2		10					Gloomy	Sergt. W. H. Lyne.
Sheffield	29.19	741.4	29.43	747.5	50.8	10.4		WNW			2		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	29.35	745.5	29.38	746.2	55.2	12.9	69	SW			1		1			0.835	21.21	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					48.0	8.9		W			3		8					D. clouds	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)			29.34	745.2	48	8.9		ENE			2		5					D. clouds	John Smith.
Stratfield Turgiss	29.36	745.7	29.57	751.1	53.2	11.8		SW			2		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.36	745.7	50	10.0		N			2		5					D. clouds	John Trotter.
Truro, Royal Institution			29.60	751.8	55	12.8		W			4		8					Gloomy	W. Newcombe.
Valencia, Observatory			29.39	746.5	53.6	12.0		SW	28	12.5			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					49	9.4		W			4		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.12	765.0	30.16	766.1	67.0	19.4	59	S	33	14.8		4	7						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.77	756.1	61.5	16.4	67	NW			3		8k			0	0		Francis Abbott, F.R.A.S
Leith, Restalrig Park			29.40	746.7	45.0	7.2		NE			1		9k			0.10	2.5	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.93	760.2	30.12	765.0	77.4	25.2	57	ESE	14.8	6.6						0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.09	764.3	30.18	766.6	57.2	14.0	61	NE	4	1.8			2			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.33	745.0	48	8.9		SE			6		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.39	746.5	47	8.3		NE			6	10	10	NE		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Moulund.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 46° 35′, W. 42° 25′			29.77	756.1	48	8.9		W			6		9			7	sswjw	D clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine, N. 51° 31′, W. 21° 58′			29.38	746.2	59	15.0		SW			6		10			6	W	Foggy	Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			29.40	746.7	56	13.3		W			4		8					D clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.21	665.7			68.0	20.0	91	SE			1	2cs	1kd		E	0.2	5.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.37	746.1	29.42	747.3	51.4	10.8	86	S			2		10					Foggy	
Fanöe	29.31	744.4	29.33	744.9	49.6	9.8	79	WSW			4		9						
Godthaab, (Greenland)	29.30	744.2	29.34	745.3	30.4	— 0.9	80	NNE			4		7						
Stykkisholm, (Iceland)	29.56	750.8	29.60	751.9	36.9	2.7	96	NE			4		5						
Thorshavn, (Faröe)	29.45	748.0	29.48	748.9	41.9	5.5	86	ENE			2		10					Raining	
Vestervig	29.07	738.4	29.24	742.7	49.3	9.6	79	SSW			6		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.22	742.3	29.78	756.3	55.4	13	66	SW			2		5		W	Blank	Blank	Cloudy	Collignon, Director.
Amiens, Normal School	29.54	750.3	29.65	753.1	54.3	12.4	61	W			3		2		W	0.425	10.8	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	29.71	754.6	29.79	756.6	57.6	14.2	91	NW			1		8		NW	0.98	25.	Very cloudy	Mr. Giraud, Director.
Bar-sur-Seine	29.16	740.6	29.72	755.0	51.8	11.0	74	N			1		10		NNW	0.610	15.5	Showery	C. Saillard.
Beaumette Obs'y (Angers)	29.01	752.0	29.76	756.0	56.3	13.5	48	WSW	6.0	2.7					WSW	0.039	1.0		Albert Cheux.
Beauvais	29.41	747.0	29.71	754.5	49.5	9.7	71	NNW			6		8		WNW	0.778	19.75	Very cloudy	Normal School.
Besançon	28.90	734.0	29.78	756.4	53.6	12	78	SSW			4		8		SW	0.217	5.5	Very cloudy	Normal School.
Bourg-en-Bresse	28.99	736.3	29.90	759.5	52.7	11.5	83	S			2		10n		S	0.79	20.	Covered	Normal School.
Bourges, Normal School	29.22	742.1	29.77	756.1	52.2	11.2	81	WSW			4		5		NNW	0.339	8.6	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.45	748.0	29.67	753.5	56.7	13.7	73	WSW			5		8		WSW	0.541	13.75	Squally	The Staff.
Carcassonne, Normal School	29.48	748.8	29.89	759.2	59.0	15	66	W			1		5		W	0.217	5.5	Cloudy	Vateau, Director.
Caen	29.61	752.0	29.68	753.8	56.5	13.6	60	E			8		8		E	0	0	Very cloudy	Normal School.
Chartres, Normal School	29.11	739.5	29.67	753.7	57.2	14	91	NW			2		10		SE	0.63	16.	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.35	745.5	29.67	753.6	51.1	10.6	68	NW			2		8k		NE	0.791	20.1	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.41	721.6	29.75	755.6	57.2	14.0	55	WSW			1		5			0.165	4.2	Cloudy	Alluard, Director.
Commercy, Normal School	23.82	732.1	29.71	754.5	47.7	8.7	81	W			8		10n		W	0.504	12.8	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.67	728.2	29.81	757.2	53.8	12.1	91	W			2		10		W	0.945	24.0	Raining	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.59	751.6	29.81	757.1	56.8	13.8	60	SW			1		5		SW	0.465	11.8	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.47	748.6	29.78	756.4	53.1	11.7	57	WSW			2		2		WSW	0.335	8.50	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.90	734.0	29.82	757.3	52.3	11.3	80	SSW			1		5		NE	0.961	24.40	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.70	754.4	29.80	756.9	57.6	14.2	57	WSW			4		5		W	0.370	9.4	½ covered	T. Carré, Director.
Mâcon, Normal School	29.09	738.9	29.74	755.4	53.8	12.1	64				4		10		S	0.449	11.4	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.69	728.7	29.73	755.2	51.8	11	77	SW			4		10		NE	0.83	21.	Covered	Normal School.
Nismes, Normal School	29.54	750.4	29.74	755.5	64.4	18	80	N			2		5		S	0.453	11.50	Cloudy	Boyer, Director.
Orleans, Normal School	29.33	744.9	29.71	754.5	53.6	12	67	W			3		5		W	0.12	3.	Cloudy	Bernard, Director.
Paris, Observatory	29.47	748.4	29.70	754.4	52.9	11.6	60	W			2		5kn		WNW	0.287	7.29	Cloudy	National Observatory.
Privas	28.72	729.4	29.77	756.1	57.2	14	86	S			2		10		SE	1.58	40.	Covered	Normal School
Rochefort, Naval Obs'y	29.82	757.4	29.85	758.2	58.1	14.5	73	W			2		10		W	0.31	8.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.60	751.8	29.69	754.6	54.0	12.2	65	W			2		0			0.236	6.0	Clear	F. Lucard, Director.
Tarbes, Normal School	28.86	733.0	29.91	759.8	64.4	18	72	W			1		2			0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.10	739.0	29.80	756.9	57.2	14	68	WSW			1		5		Calm	0.441	11.2	Cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.83	757.6	29.85	758.3	81.0	27.2										0.87	22.		L'Abbé Marchesi.
Marseilles, Observatory			29.76	755.9	56.7	13.7	83	W			1		10			0.929	23.60	Very cloudy	The Staff.
Mont-Louis	24.68	626.8	29.09	761.8	41.0	5.0	58	N	14.9	6.66			8		SSW	0.181	4.6		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.42	747.2	29.69	754.2	53.1	11.7	63	WNW			2–3		4		WNW	0.366	9.3		Marié Davy, Director.
Perpignan			29.85	758.1	57.6	14.2	59	N	11.2	5.00			8		W	0.130	3.3		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.06	535.0			21.6	— 5.8		SW			4		10					Snowy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.34	567.4			27.9	— 2.3		SW			3		9			0.421	10.7	Snowy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.53	750.1	29.70	754.3	55.0	12.8	58	W			2		3k		NW	0.543	13.8		E. Renou.
Toulouse, Observatory	29.20	741.6	29.92	759.9	56.8	13.8	66	W			3		6			0.390	9.9	Rainy	The Staff.
Tours	29.60	751.8	29.80	756.8	55.4	13.0	55	NNW			3		5		NNW	0.358	9.1		C. Marquet.
Versailles, (near Paris)			29.71	754.5	55.0	12.8	61	NW			2		8			0.346	8.81	Very cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.47	773.8	30.49	774.4	43.9	6.6	49	NW	7.2	3.2		5c		WSW		0	0	Lunar corona	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,377 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 136 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.34	745.2	29.51	749.5	59.7	15.4	60	S			2		7			0	0		Prof. Arndt.
Breslau	29.13	739.9	29.65	753.2	58.1	14.5	40	SSE			3		1			0	0		Royal University Obs'y.
Carlsruhe	29.19	741.3	29.60	751.8	56.1	13.4	79	SW			4		9			0.102	2.6	Raining	Albert Senz.
Cassel	28.96	735.6	29.56	750.8	54.7	12.6	72	WSW			4		10	S		0.178	4.53		Dr. H. Möhl.
Crefeld	29.30	744.2	29.46	748.2	47.8	8.8	90	NW			5		10			0.47	12.	Raining	Director Lose.
Emden	29.42	747.3	29.46	748.2	49.5	9.9	65	WSW			3		10			0.339	8.6		Prof. Prestel.
Frankfort on the Main	29.26	743.1	29.62	752.3	55.2	12.9	77	SSW			2		10			0.260	6.6		Physical Society.
Friedrichshafen	28.28	718.4	29.70	754.3	55.0	12.8	69	WNW					6	WSW		0.228	5.8	Raining	M. Wilhelm.
Hamburg	29.38	746.2	29.45	748.0	52.3	11.3	97	SW			1		10			0.110	2.8	Raining	Captain F. Hegemann.
Kiel	29.40	746.8	29.42	747.2	51.6	10.9	92	SW			2		10			0.203	5.16		Prof. G. Karsten.
Königsberg, (Prussia)	29.58	751.3	29.65	753.1	54.5	12.5	55	S										Clear	Prof. E. Luther.
Kösiin			29.52	749.7	56.5	13.6		S			4		1			0.193	4.9		H. Müller.
Leipsic, Observatory	29.13	739.9	29.54	750.3	63.0	17.2	53	SSE			2		9	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.61	752.1	29.66	753 3	48.9	9.4	67	S			3		4ck;cs	SW					Reinbrechtvon Skalweit.
Neufahrwasser	29.61	752.1	29.63	752.5	50.7	10.4	73	SSW			4		7	S		0	0		A. Lothes.
Posen	29.37	746.0	29.66	753.4	58.1	14.5	49	S			6-7		1			0	0	Clear	Dr. Magener.
Strassburg Obs., (in Alsace	29.12	739.7	29.67	753.6	54.3	12.4	82	S			4		10	WSW		0.014	0.35		Dr. Schur.
Stuttgart	28.68	728.5	29.60	751.8	59.0	15.0	55	W			7		10	W		0	0		Prof. Schoder.
Treves, (Trier)	28.97	735.8	29.48	748.9	50.0	10.0	92	W			6		10			0.284	7.22		Prof. Flesch.
Weissenburg, (Bavaria)	28.08	713.3	29.55	750.5	61.7	16.5	45	SSW			2		6ks		SW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.49	749.0	29.52	749.8	54.7	12.6	91	SSE			2		4					Fair	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4: Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.58	751.2	29.96	761.0	64.9	18.3		NE										½ clear	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.88	758.9	29.93	760.2	84.7	29.3	30	W	16.0?	7.2?			1			0	0	Misty	
Deesa	29.46	748.2	29.93	760.3	86.0	30.0	37	Calm					1	SSW		0	0	D. clouds	
Bombay	29.81	757.3	29.85	758.2	82.6	28.1	77	NW								0	0	Misty	
Poona	27.86	707.6	29.86	758.3	80.6	27.0	65	SE					10			0	0	D. clouds	
Lahore	29.21	742.0	29.97	761.2	73.8	23.2	43	Calm	0.6	0.3			3			0	0	Misty	
Belgaum	27.35	694.6	29.90	759.3	74.7	23.7	87	SE	3.0	1.3			10	WSW	E			Raining	
Bangalore																			
Roorkee	29.03	737.2	29.94	760.4	74.8	23.6	35	Calm	0.9	0.4						0	0		
Agra	29.36	745.8	29.93	760.3	77.8	25.4	39	N								0	0		
Trichinopoly																			
Nagpur	28.86	733.1	29.91	759.6	80.1	26.7	69	NE	2.2	1.0			9					Threatening	
Madras																			
Lucknow	29.58	751.2	29.96	760.9	73.3	22.9	46	WSW	1.9	0.8			2	E		0	0	Blue sky	
Allahabad	29.63	752.5	29.94	760.5	75.6	24.2	53	Calm	0.8	0.4			1			0	0	D. clouds	
Patna	29.76	756.0	29.95	760.6	79.5	26.4	33	W	0.8	0.4			8	W	W	0	0	D. clouds	
Hazaribagh	27.93	709.3	29.97	761.2	72.8	22.7	43	N	2.6	1.2			4			0	0		
Cuttack	29.85	758.1	29.93	760.2	81.2	27.3	71	E	3.4	1.5			3			0	0	D. clouds	
Calcutta (Alipore)	29.92	760.0	29.94	760.6	78.4	25.8	70	NNE	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.63	760.1	29.92	760.0	77.6	25.3	69	Calm	1.6	0.7			5	W		0	0	D. clouds	
Chittagong	29.82	757.3	29.91	759.7	77.9	25.5	91	Calm	0.5	0.2			3			0	0	D. clouds	
Sibsagar	29.64	752.9	29.98	761.6	76.2	24.6	77	E	1.3	0.6			8			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.57	725.8	29.95	760.7	78.5	25.8	72	NE	2.5	1.1			8	NE		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.99	558.5	29.87	758.6	31.1	— 0.5	82	SW			2		10			7.876*	200.0*		Ab. Dom. Morgini.
Stelvio	21.96	557.8	29.89	759.3	32.0	0.0		W			8		10			0	0		Signora Ernesta Manfredi.
Udine	29.47	748.4	29.88	759.0	54.9	12.7	71	NE	0.7	0.3			8			0	0		Prof. Giovanni Clodig.
Padua	29.74	755.4	29.85	758.2	58.8	14.9	56	NNE	5.6	2.5			3	SSW		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.67	753.5	29.86	758.5	58.3	14.6	32	E	0.7	0.3			4	W		0	0		Conte Alm. Da Schio.
Verona	29.69	754.0	29.91	759.7	63.1	17.3	52	ENE	8.7	3.9			3			0	0		Dott. B. Bertoncelli.
Bergamo	28.67	725.6	29.89	759 3	51.4	10.8	77	NW			2		10			0	0		Prof. Trionfini Carlo.
Domodossola	28.85	733.5	29.92	760.0	46.2	7.9	92	Calm			0		10			0.667	16.7		Prof. Giuseppe Calza
Milan	29.35	745.5	29.87	758.8	51.1	10.6		NW			1		10			1.319	33.5		Ab. Gio. Capelli.
Pavia	29.52	749.9	29.87	758 8	49.6	9.8	96	NE			1		10	SW		0.165	4.2		Prof. Gio. Cantoni.
Moncalieri	28.98	736.1	29.91	759.6	47.7	8.7	87	NNW	1.8	0.8			10	SE		0.563	14.3		Prof. P. F. Denza.
Mondovi	27.96	710.2	29.89	759.3	48.4	9.1	57	NW			4		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29 61	752.2	29.84	757.8	61.2	16.2	77	SE			4		10	SW		0.240	6.1		Prof. L. Vassallo.
Genoa	29.67	753.6	29.84	757.9	60.8	16.0	79	SE	11.2	5.0			10	S		0.205	5.2		Prof. G. M. Garibaldi
Piacenza	29.60	751.8	29.85	758.2	54.3	12.4	67	E	1.3	0.6			10			0	0		Dott. G Manzi.
Parma	29.51	749.6	29.82	757.5	60.8	16.0	49	ENE			2		9			0	0		Prof. P. Pigorini.
Florence	29.64	752.9	29.90	759.5	61.7	16.5	48	NW			2		5	SW		0	0		Cav. F Meucci.
Leghorn	29.78	756.4	29.87	758.6	64.8	18.2	63	S	6.3	2.8			8	S		0	0		Prof. P. Monte.
Siena	28.69	728.7	29.95	760.6	61.5	16.4	54	SSW	0.7	0.3			4	SW		0	0		Prof. L. Toscani.
Urbino	28.35	720.2	29.93	760.2	59.4	15.2	35	SW			2		2			0	0		Prof. P. Serpieri.
Pesaro	29.82	757.3	29.87	758.6	58.5	14.7	68	E	13.0	5.8			4			0	0		Prof. Luigi Guidi.
Ancona	29.70	755.8	29.86	758 5	61.5	16.4	52	SE			4		5			0	0		Prof. F. DeBosis.
Grosseto	29.87	758.7	29.98	761.6	65.1	18.4	57	SSE			2		4	S		0	0		Avv. P. Ponticelli.
Rome	29.75	755.6	29.93	760 1	64.4	18.0	56	S	8.1	3.6			3			0.591	15.0		Prof. P. A Secchi.
Naples, O. U.	29.76	755.8	29.96	760.9	67.6	19.8	52	S			2		3	SSW		0	0		Prof. L. Palmieri.
Lecce					62.6	17.0	57	SSW	0	0			4	N		0	0		Prof. C. De Giorgi.
Cosenza	29.14	740.1	30.03	762.8	62.6	17.0	84	SE	0	0			0			0	0		Prof. F. D. Conti.
Cagliari					69.1	20.6		S			4		7	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.93	760.2	29.98	761.4	62.4	16.9	73	S			2		4			0	0		Prof. F. Cafiero.
Palermo	29.66	753.3	29.91	759.8	63.5	17.5	57	NE	3.8	1.7			0			0	0		Prof. G. Cacciatore.
Caltanissetta	27.98	710.6	29.91	759.8	62.2	16.8	61	ESE			2		5			0	0		Prof. A. Pagani.
Syracuse	29.88	759.0	29 96	761.0	64.0	17.8	71	WSW			1		4	NNW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.44	747.7	29.99	761.8	64.4	18.0	53	SW	1.3	0.6			4			0	0		Prof. F. Brioschi

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft. *Unmelted snow.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei, (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.68	753.9	29.78	756.4	51.5	10.8	63	NNW	2	0.9						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.10	588.9	30.25	768.2	57.2	14.0	60	Calm	0	0		0	10k			0	0	Foggy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.54	750.3	29.54	750.3	52.5	11.4		W			4					0.205	5.2		
Groningen	29.38	746.3	29.44	747.7	50.9	10.5		WSW			2					0.142	3.6		
Helder	29.43	747.5	29.43	747.5	50.9	10.5		WSW			4					0.181	4.6		
Hellevoetsluis			29.50	749.2	50.7	10.4	72	W			4								
Utrecht	29.45	747.9	29.49	749.1	50.0	10.0	82	SW			2		10			0.012	0.3	Overcast	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.13	739.8	29.18	741.2	47.8	8.8	71	S	2.5	1.1			3			0.031	0.8		
Brönö	29.45	748.0	29.49	749.0	37.0	2.8	72	NE	7	3			4			0	0		
Christiania	29.19	741.5	29.34	745.2	39.0	3 9	85	NNE	11	5			10			0.055	1.4	Light rain	
Tromsö	29.22	742.1	29.26	743 2	32.7	0.4	78	SW	7	3			10			0.118	3.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.03	762.7	30.22	767.5	66.2	19.0	88	W	8.1	3.6			3			0	0		Dr. J. A. Sampaio
Campo Major	29.08	738.5	30.10	764.5	62.6	17.0	44	WNW	13.7	6.1			8	WNW		0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.18	766.6	30.25	768.4	72.9	22.7	61	SW	3.1	1.4			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.82	757.3	30.17	766.4	61.7	16.5	50	NNW	18.6	8.3			6			0.079	2.0		The Staff.
Ponta Delgada, (Azores)	30.23	767.8	30.30	769.6	68.4	20.2	78	SW	5.6	2.5			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell: Height scale 0-9	Sea or swell: Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.32	744.8	29.74	755.5	52.7	11.5	57	SSE	11	5			6						Astronomical Obs.
Wilna	29.39	746.4	29.80	757.0	54.3	12.4	53	S	4	2			5						Astronomical Obs.
Dorpat	29.38	746.3	29.63	752.5	50.7	10.4	82	SSW	9	4			9						Prof. Dr. Weihrauch
St. Petersburg	29 61	752.2	29.63	752.6	44.6	7.0	76	SSW	9	4			10						Central Physical Obr.
Kuopio	29.12	739.6	29.45	747.9	36.0	2.2	80	W	18	8			10					Raining	Ch. Forsten.
Kieff	29.44	747.7	30.08	764.0	50.4	10.2	64	S	13	6			2						Physical Cabinet.
Nikolaiev	30.08	764.0	30.15	765.8	54.3	12.4	57	SSE	4	2			0						Kurdakof.
Kertch	30.09	764.2	30.11	764.7	56.1	13.4	73	ENE	9	4			0						Lagorio.
Moscow	29.46	748.3	30.02	762.4	50.4	10.2	72	S	4	2			3						Meteorological Obs.
Lugan	30.07	763.6	30.27	768.8	51.6	10.9	49	ESE	13	6			0						Meteorological Obs.
Archangel	29.17	740 8	29.19	741.3	38.8	3.8	83	S	22	10			10						Ogorodnikof.
Tiflis	28.82	731.9	30.24	768.1	55.0	12.8	85	SSE	4	2			10						Physical Observatory.
Astrakhan	30.54	775.6	30.45	773.5	48 0	8.9	53	ESE	7	3			1						Sebastianof.
Kasan	29.77	756.2	30.05	763.3	37.4	3.0	88	SSW	4	2			10						Physical Cabinet.
Orenburg																			Tschernischei.
Ekaterinburg	29.06	738.2	30.06	763.4	27.9	— 2.3	67	W	11	5			9						Meteorological Obs.
Nukuss	30.15	765.7	30.38	771.7	47.8	8.8	58	NE	7	3			0						
Kasaly																			Bobrof.
Tashkend	28.64	727.4	30.37	771.3	55.8	13.2	72	NW	4	2			10						Michelson.
Barnaul	29.50	749.3	30.02	762.4	55.4	13 0	26	Calm	0	0			10					Foggy	Meteorological Obs.
Yeniseisk	29.75	755.6	29.89	759.3	40.3	4.6	85	E	2	1			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.38	771.6	30.52	775.2	43.7	6.5	41	NNW	22	10			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					30.2	— 1.0	80	W	7	3			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.75	704.8	29.97	761.3	57.4	14.1	44	NW	22.4	10.00		0	7			0.063	1.6	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	30.03	762.8	30.11	764.8	78.4	25.8	88	ENE	3.8	1.7			10n			0.091	2.3	Cloudy	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.03	762.8	30.13	765.3	65.7	18.7	64	WNW	24.1	10.8		1	5	E	W	0.004	0.1		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.94	760.5	83.5	28.6	81	SE	2.2	1.00		4kn	2kn	E	E	0.069	1.75	Clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Low'r 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.30	744.1	29.34	745.1	27.3	—2.6		W			4		0			0.315	8.0		
Umea	29.46	748.2	29.51	749.5	32.2	0.1	76	NW			2		6			0.209	5.3		
Hernosand	29.47	748.4	29.52	749.7	34.2	1.2	62	Calm			0		10			0.280	7.1	Raining	
Stockholm	29.24	742.8	29.42	747.3	43.9	6.6	94	NNE			2		10			0.520	13.2	Raining	
Wisby	29.43	747.5	29.49	749.0	48.6	9.2	75	SW			4		10			0.244	6.2	Raining	
Sub-Series.																			
Upsala	29.38	746.2	29.45	748.1	39.2	4.0	95	NE	8.3	3.7			10			0.348	8.85	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.41	721.7	29.87	758.6	45.5	7.5	92	NW			1		10					Raining	The Observatory.
Zurich	28.14	714.7	29.78	756.5	52.2	11.2	71	W			1		10			0.276	7.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —4.4 mm; Thermometer, —3.6 cent.; Relative Humidity, +18 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.00	762.0	58.1	14.5	76	ENE	11	5.0			10		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			30.08	764.0	63.7	17.6		NW			1		0						B. Stefanidès.
Valona			29.98	761.6	74.3	23.5		W			1		2			0	0	Slightly cl'dy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.65	753.1	29.76	756.0	72.0	22.2	81	SW			3		10n		SW	0.50	12.7	Thunder	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			29.90	759.4	50	10.0		W	1	0.4			10s		W	0.02	0.5	Cloudy	W. R. Bigg.
*Chatham, N. B.			29.88	758.9	28	— 2.2	94	S	3	1.3		5cs	5ks	SW	SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island			29.89	759.2	38	3.3	68	Calm	0	0		0	5s		Calm	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.91	759.7	42.3	5.7	87	NW			1		10s			0.030	0.76	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.84	757.9	29.88	758.9	32.3	0.2	87	W			1					0	0	Overcast	H. A. Johnson.
Esquimault, B. C.	29.73	755.1	29.78	756.4	49.8	9.9	100	NE				10cs?	0?			0.04	1.0	Rainy?	W. H. Bevis.
*Father Point, Quebec			29.87	758.7	33	0.6	84	NW	16	7.2			10n		W	Inap.	Inap	Light snow	J. McWilliams.
Fredericton, N. B.	29.88	758.9	29.94	760.5	28	— 2.2	93	Calm	0	0		7ck	Fog	W		0	0	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.79	756.7	30	— 1.1	97	N	4	1.8		Haze	Sm'e	N	N	0	0	Smoky	James Stewart.
Goderich, Ontario	29.16	740.7	29.94	760.5	53.9	12.2	91	SW			3	8k	2s	W		0.316	8.0	Cloudy	H. J. Strang, M. A.
Granton, Ontario	28.85	732.8	29.95	760.7	50	10.0	79	SW			1	cs	0	E		0	0	Clear	James Grant.
*Halifax, N. S.	29.76	755.9	29.90	759.4	43	6.1	92	NW	3	1.3			10n			0.011	0.28	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.60	751.8	29.97	761.2	57.1	13.9	81	SW			4	0	0			0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.74	755.4	29.76	755.9	39	3.9	46	W			4		2ks		W	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.57	751.1	29.93	760.2	54	12.2	85	W	4	1.8		5cs	2ks	W	W	0	0	Cloudy	S. Woods, M. A.
*Montreal, Quebec	29.69	754.1	29.89	759.2	41	5.0	83	Calm	0	0			10n			Inap.	Inap.	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.14	740.1	29.84	757.9	42	5.6	96	S	3	1.3		5k	5ks	W	W	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.14	740.1	29.89	759.2	49.7	9.8	78	SW			1		10ks			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.30	744.2	29.98	761.5	55	12.8	74	SW	12	5.4		10ck	0	SW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	28.81†	731.8†	28.86†	733.0†	41.4	5.2		NW	6	2.7						0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.35	745.5	29.99	761.7	55	12.8	69	SW	20	8.9		8k	0	W		0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.56	750.8	29.89	759.2	36	2.2	55	W	2	0.9		2c	5n	W	W	0	0	Fair	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.42	747.3	29.89	759.2	34	1.1	89	SE	3	1.3			10s		NW	0	0	Cloudy	W. H. McIntyre.
St. John, N. B.	29.77	756.1	29.94	760.5	36	2.2	90	Calm	0	0			10s			0.10	2.5		G. Murdock, C. E.
*Saugeen, Ontario	29.15	740.4	29.84	757.9	53	11.7	83	SW	18	8.0		2cs	5k		S	0	0	Cloudy	K. Stewart.
Stayner, Ontario			29.87	758.7	53	11.7	70	NW	13	5.8		5cs	0	W		0	0	Fair	R. J. Cole.
Stratford, Ontario	28.67	728.2	29.95	760.7	49.2	9.6	77	SW	10	4.5		2cs	4s			0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.83	757.7	29.86	758.4	41	5.0	95	SW	2	0.9		8k	2ks	W	W	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.55	750.6	29.93	760.2	52	11.1	71	W	9	4.0			10ks		W	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.	29.82	757.4	29.92	760.0	41.2	5.1	96	SW	2	0.9			10n			0.02	0.5	Light rain	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					38.0	3.3	72	W				10ks	10ns			Inap.	Inap.	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

†Probably 29.81 inches, 757.2 mm., and 29.86 inches, 758.4 mm.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.81	757.2	30.03	762.7	54	12.2	68	S	4	1.8		0	Haze		Calm	0	0	Clear	
Alpena, Michigan	29.17	740.9	29.81	757.2	51	10.6	72	SW	4	1.8		5cs	0	W		0	0	Fair	
Atlantic City, New Jersey	30.16	766.1	30.18	766.6	53	11.7	86	W	4	1.8		0	0			0	0	Clear	
Augusta, Georgia	30.10	764.5	30.29	769.4	47	8.3	88	N	3	1.3		0	Haze		Calm	0	0	Hazy	
Baltimore, Maryland	30.13	765.3	30.18	766.6	50	10.0	71	Calm	0	0		Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.13	765.3	30.16	766.1	52	11.1	79	W	10	4.5		0	Haze		Calm	0	0	Clear.	
Bismarck, Dakota	27.89	708.4	29.57	751.1	34	1.1	90	Calm	0	0		0	1s; sm		Calm	0	0	Clear	
Boise City, Idaho	27.21	691.1	29.83	757 7	46	7.8	92	Calm	0	0		0	5s		Calm	0.05	1.3	Fair	
Boston, Massachusetts	29.82	757.4	29.98	761.5	55	12.8	61	SW	11	4.9		2c;cs	0	NW		0	0	Clear.	
Brackettville, Texas	28.79	731.3	29.79	756.7	67	19.4	74	E	6	2.7			10s	Calm		0	0	Cloudy	
Breckenridge, Minnesota	28.69	728.7	29.69	754.1	36	2.2	90	NW	9	4.0		0	8ks		W	.0	0	Cloudy	
Brownsville, Texas	29.94	760.5	30.02	762.5	73	22.8	81	SE	6	2.7			10s		Calm	0.02	0.5	Cloudy	
Buffalo. New York	29.26	743.2	29.96	761.0	56	13.3	74	SW	17	7.6		5c	2s	SW	SW	0	0	Fair	
Burlington, Vermont	29.64	752.8	29.90	759.4	46	7.8	100	Calm.	0	0			10n		Calm	0.21	5.3	Light rain	
Cairo, Illinois	29.76	755.9	30.16	766.1	49	9.4	85	S	5	2.2		0	0			0	0	Clear.	
Camp Grant, Arizona																			
Camp Verde, Arizona																			
Campo, California																			
Cape Hatteras, N. Carolina	30.18	766.6	30.19	766.8	59	15.0	70	NE	7	3.1		0	0			0	0	Clear	
Cape Henry, Virginia	30.20	767.1	30.22	767.6	57	13.9	57	SW	8	3.6		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.24	768.1	30.26	768.6	59	15.0	70	NE	8	3.6		1c	0	Calm		0	0	Clear	
Cape May, New Jersey	30.14	765.5	30.17	766.3	58	14.4	70	SW	13	5.8		0	0			0	0	Clear	
Charleston, South Carolina	30.20	767.1	30.27	768.8	58	14.4	76	N	7	3.1		0	0			0	0	Clear	
Cheyenne, Wyoming	23.94	608.1	29.88	758.9	34	1.1	79	W	12	5.4		0	0			0	0	Clear	
Chicago, Illinois	29.20	741.7	29.89	759.2	50	10.0	79	SW	16	7.2			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.47	748.5	30.13	765.3	46	7.8	92	SE	3	1.3		2c	Fog	Calm	SE	0	0	Fair	
Cleveland, Ohio	29.37	746.0	30.10	764.5	54	12.2	55	S	14	6.3		8ck	0	Calm		0	0	Fair	
Concho, Texas					60	15.6	82	S	6	2.7		8cs	0	S		0	0	Cloudy	
Corsicana, Texas	29.59	751.6	30.07	763.8	51	10.6	86	S	4	1.8		2cs	5s	Calm	SE	0	0	Fair	
Davenport, Iowa	29.22	742.2	29.85	758.2	52	11.1	72	SW	12	5.4		4cs	4s	SW	SW	0	0	Fair	
Denison, Texas	29.26	743.2	30.07	763.8	50	10.0	86	SE	6	2.7		2c	2s	W	Calm	0	0	Fair	
Denver, Colorado	24.71	627.6	29.93	760.2	40	4.4	73	S	5	2.2			10s		Calm	0	0	Cloudy	
Detroit, Michigan	29.31	744.5	29.98	761.5	50	10 0	78	SW	5	2.2		8cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.22	691.4	29.46	748 3	51	10.6	86	S	1	0.4		5c	2s	SW	SW	0	0	Fair	
Dubuque, Iowa	29.10	739.1	29.79	756.7	51	10.6	78	S	4	1.8			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.06	738.1	29.74	755.4	43	6.1	91	E	9	4.0			10s		Calm	0	0	Threatening	
Eagle Pass, Texas	29.17	740.9	29.89	759.2	66	18.9	73	SE	3	1.3			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.82	757.4	29.88	758.9	45	7.2	75	W	3	1.3			10s		W	Inap.	Inap.	Cloudy	
Erie, Pennsylvania	29.31	744.5	30.02	762.5	55	12.8	68	S	12	5.4		5c	Sm'e	W		0	0	Fair	
Escanaba, Michigan	29.13	739.9	29.79	756.7	41	5.0	74	N	3	1.3			10s		N	0	0	Cloudy	
Florence, Arizona	28.36	720.3	29.96	761.0	55	12.8	68	N				0	0			0.02	0.5	Clear	
Fort Bayard, New Mexico	24.03	610.4	30.03	762.7	43	6.1	83	SW	8	3.6			10n		SW	0.02	0.5	Light rain	
Fort Craig, New Mexico	25.46	646.7			49	9.4	78	N	6	2.7			10s		Calm	0	0	Cloudy	
Fort Gibson, Indian Ter	29.46	748.3	30.00	762.0	51	10.6	78	S	8	3.6		5cs	0	SW		0	0	Fair	
Fort Griffin, Texas	28.70	729.0	29.97	761.2	56	13.3	87	Calm	0	0			10s		Calm	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.74	730.0	29.84	757.9	53	11.7	73	S	16	7.2			10s		SW	0	0	Cloudy	
Fort Sully, Dakota	28.10	713 7	29.79	756.7	32	0.0	89	Calm	0	0		0	0			0	0	Clear.	
Galveston, Texas	30.05	763.3	30.09	764.3	68	20.0	79	SE	6	2.7		10ck;cs	0	W		0	0	Cloudy	
Grand Haven, Michigan	29.23	742.4	29.87	758.7	55	12.8	80	S	18	8.0			10s		W	0	0	Cloudy	
Indianapolis, Indiana	29.29	744.0	30.07	763.8	51	10.6	72	SE	6	2.7		8cs	Sm'e	W		0	0	Fair	
Indianola, Texas	30.04	763.0	30.06	763.5	70	21.1	84	SE	6	2.7		10k	0	W		0	0	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	30.20	767.1	30.22	767.6	60	15.6	76	NE	4	1.8		5k	0	Calm		0	0	Fair	
Keokuk, Iowa	29.25	742.9	29.86	758.4	54	12.2	68	SW	8	3.6			10s		Calm	0	0	Cloudy	
Key West, Florida	30.09	764.3	30.12	765.0	77.0	25.0	79	N	11	4.9		2c	8s	Calm	E	0	0	Cloudy	
Kittyhawk, North Carolina	30.24	768.1	30.26	768.6	54	12.2	86	SW	2	0.9		0	0			0	0	Clear.	
Knoxville, Tennessee	29.27	743.4	30.32	770.1	39	3.9	91	Calm	0	0			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	28.99	736.3	29.70	754.4	53	11.7	67	S	6	2.7		0	0			0	0	Clear	
La Mesilla, New Mexico	26.08	662.4	30.22	767.6	50	10.0	79	NW	10	4.5			10n		SW	0.02	0.5	Light rain	
Laredo, Texas					70	21.1	79	SE	3	1.3		10k	0	S		0	0	Cloudy	
Leavenworth, Kansas	29.14	740.1	29.97	761.2	54	12.2	73	S	6	2.7			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.67	753.6	30.01	762.2	54	12.2	79	NE	7	3.1		0	0			0	0	Clear	
Louisville, Kentucky	29.57	751.1	30.14	765.5	50	10.0	85	S	6	2.7		5c	Fog	S	S	0	0	Fair	
Lynchburg, Virginia	29.52	749.8	30.21	767.3	49	9.4	71	Calm	0	0		0	Haze		NE	0	0	Hazy	
Maricopa Wells, Arizona					51	10.6	46	N				0	0			Inap.	Inap.	Clear.	
Marquette, Michigan	29.07	738.4	29.76	755.9	47	8.3	77	NE	4	1.8			10s		Calm	0	0	Cloudy	
Mason, Texas	28.36	720.3	30.09	764.3	60	15.6	77	SE	8	3.6			10s					Cloudy	
Memphis, Tennessee	29.87	758.7	30.20	767.1	48	8.9	85	S	3	1.3		1c	Fog	SW	Calm	0	0	Clear.	
Milwaukee, Wisconsin	29.20	741.7	29.88	758.9	51	10.6	72	SW	12	5.4		Haze	Sm'e			0	0	Smoky	
Mobile, Alabama	30.17	766.3	30.22	767.6	49	9.4	93	N	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	30.00	762.0	30.25	768.3	47	8.3	92	Calm	0	0		10c	Fg'sm'	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.13	739.9	30.20	767.1	47	8.3	73	SW	1	0.4		0	Fog			0	0	Fair	
Mt. Washington, N. H.	23.56	598.4	29.92	760.0	32	0.0	100	NW	60	26.8			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.66	753.4	30.21	767.3	43	6.1	91	Calm	0	0		2c	Fog	SW	Calm	0	0	Fair	
New Haven, Connecticut	29.95	760.7	30.07	763.8	54	12.2	73	SW	5	2.2		Haze	Haze		Calm	0	0	Clear.	
New London, Connecticut	30.01	762.2	30.06	763.5	55	12.8	74	W	8	3.6		1cs	Haze	W	Calm	0	0	Clear	
New Orleans, Louisiana	30.13	765.3	30.19	766.8	59	15.0	84	NE	4	1.8		5ck;k	0	Calm; s		0	0	Fair	
Newport, Rhode Island	29.99	761.7	30.04	763.0	56	13.3	73	SW	12	5.4		2c	0			0	0	Clear	
New York, New York	29.94	760.5	30.12	765.0	51	10.6	72	W	17	7.6		2cs	0	Calm		0	0	Fair	
Norfolk, Virginia	30.19	766.8	30.25	768.3	50	10.0	78	SW	4	1.8		0	0			0	0	Clear	
North Platte, Nebraska	26.93	684.0	29.54	750.3	33	0.6	89	NW	8	3.6		2ck	2s	NW	Calm	0	0	Fair	
Olympia, Washington Ter.	29.83	757.7	29.87	758.7	53	11.7	86	SW	8	3.6			10n		Calm	0.80	20.3	Light rain	
Omaha, Nebraska	28.66	728.0	29.72	754.9	48	8.9	85	S	3	1.3		5cs	0	Calm		0	0	Fair	
Oswego, New York	29.62	752.3	29.94	760.5	57	13.9	62	SW	9	4.0		5cs	0	Calm		0	0	Fair	
Pembina, Dakota	28.93	734.8	29.79	756.7	24	—4.4	100	NW	4	1.8			Fog		Calm	0	0	Dense fog	
Philadelphia, Pennsylvania	30.12	765.0	30.17	766.3	51	10.6	78	W	8	3.6		1c	Fog	Calm	Calm	0	0	Clear.	
Phœnix, Arizona					51	10.6	86	Calm				0	0			0.04	1.0	Clear.	
Pike's Peak, Colorado	17.67	448.8	29.88	758.9	11	—11.7	100	N	4	1.8			10n		Calm	0 11	2.8	Light snow	
Pioche, Nevada	24.01	609.8	29.78	756.4	38	3.3	72	Calm	0	0			10s		Calm	0.01	0.3	Cloudy	
Pittsburg, Pennsylvania	29.31	744.5	30.13	765.3	48	8.9	77	S	4	1.8		0	0			0	0	Clear	
Port Huron, Michigan	29.28	743.7	29.94	760.5	51	10.6	72	S	11	4.9			10ks		S	0	0	Cloudy	
Portland, Maine	29.82	757.4	29.87	758.7	48	8.9	85	SW	10	4.5		5k;hz	Haze	W		0	0	Hazy	
Portland, Oregon	29.94	760.5	30.03	762.7	55	12.8	87	SE	1	0.4			10s		SE	0.37	9.4	Cloudy	
Prescott, Arizona	24.74	628.4	30.10	764.5	39	3.9	38	W				5c	2s	SE	SE	0.14	3.6	Fair	
Punta Rassa, Florida	30.14	765.5	30.15	765.8	67	19.4	84	N	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.78	756.4	30.14	765.5	57	13.9	81	N	8	3.6			10s		Calm	0.02	0.5	Cloudy	
Rochester, New York	29.32	744.7	29.92	760.0	56	13.3	62	W	16	7.2		5c	Haze	W	Calm	Inap.	Inap.	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.52	749.8	30.08	764.0	52.5	11.4	93	SE	3	1.3			10s		Calm	0.02	0.5	Cloudy	
Sacramento, California	30.02	762.5	30.11	764.8	56	13.3	93	W	1	0.4		8c	0	NW		0.01	0.3	Cloudy	
St. Louis, Missouri	29.45	748.0	30.02	762.5	52	11.1	79	S	12	5.4		0	5s		Calm	0	0	Fair	
St. Marks, Florida	30.21	767.3	30.22	767.6	50	10.0	97	N	2	0.9		0	0			0	0	Clear.	
St. Paul, Minnesota	28.82	732.0	29.62	752.3	51	10.6	65	SE	2	0.9		0	2s		Calm	0	0	Fair	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.63	651.0	29.96	761.0	46	7.8	69	Calm	0	0			10n		Calm	Inap.	Inap.	Light rain	
San Antonio, Texas	29.31	744.5	29.89	759.2	63	17.2	88	SE	2	0.9			10ks		SE	0	0	Cloudy	
San Diego, California	29.97	761.2	30.04	763.0	57	13.9	87	NE	4	1.8		0	0			0	0	Clear	
Sandusky, Ohio	29.39	746.5	30.06	763.5	53	11.7	66	SW	12	5.4		5cs	Sm'e	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.09	764.3	30.11	764.8	56	13.3	68	W	19	8.5		2c	0	W		0	0	Fair	
San Francisco, California	30.04	763.0	30.11	764.8	59	15.0	87	W	2	0.9		8c	0	N		0	0	Fair	
Santa Fé, New Mexico	23.20	589.3	29.74	755.4	36	2.2	80	NE	8	3.6		Haze	2s	NE	Calm	0	0	Cloudy	
Savannah, Georgia	30.16	766.1	30.26	768.6	56	13.3	80	NE	3	1.3		0	0			0	0	Clear	
Shreveport, Louisiana	29.93	760.2	30.16	766.1	46	7.8	92	SE	4	1.8			10s		E	0	0	Cloudy	
Smithville, North Carolina	30.24	768.1	30.28	769.1	54	12.2	79	N	6	2.7		0	0			0	0	Clear	
Springfield, Massachusetts	29.82	757.4	29.95	760.7	53	11.7	73	S	2	0.9		1c	Sm'e	W	Calm	0	0	Fair	
Stanwix, Arizona					51	10.6	59	N				0	0			0	0	Clear.	
Stockton, Texas	26.89	683.0	29.87	758.7	52	11.1	86	S	8	3.6		0	5s		Calm	0	0	Fair	
Thatcher's Island, Mass	29.90	759.4	29.95	760.7	54	12.2	73	W	20	8.9		2cs	0	W		0	0	Smoky	
Toledo, Ohio	29.35	745.5	30.02	762.5	52	11.1	72	SW	8	3.6		2cs	0	NW		0	0	Fair	
Tucson, Arizona	27.50	698.5	30.06	763.5	55	12.8	68	S				5cs	0	Calm		0	0	Fair	
Tybee Island, Georgia	30.22	767.6	30.25	768.3	63	17.2	83	NE	12	5.4		2k	0	SW		0	0	Fair	
Umatilla, Oregon	29.68	753.9			47	8.3	85	SE	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
Vicksburg, Mississippi	29.98	761.5	30.25	768.3	45	7.2	92	S	6	2.7		5c	5s	Calm	SE	0	0	Cloudy	
Virginia City, Montana	24.17	613.9	29.65	753.1	38	3.3	63	Calm	0	0			10s		NW	Inap.	Inap.	Cloudy	
Visalia, California	29.75	755.6	30.12	765.0	47	8.3	92	Calm	0	0		1c	0	N		0	0	Clear	
Washington, D. C.	30.09	764.3	30.20	767.1	44	6.7	100	W	1	0.4		0	Fog		SW	0	0	Clear	
Wickenburg, Arizona					44	6.7	35	N				0	0			0	0	Clear	
Wilmington, N. Carolina	30.18	766.6	30.26	768.6	50	10.0	86	NE	2	0.9		0	0			0	0	Clear	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	44	6.7	75	SW	5	2.2			10s		SW	0.01	0.3	Cloudy	
Wood's Holl, Mass	30.00	762.0	30.05	763.3	59	15.0	81	W	15	6.7		0	Haze		Calm	0	0	Hazy	
Yankton, Dakota	28.49	723.6	29.78	756.4	40	4.4	86	Calm	0	0		0	0			0	0	Clear	
Yuma, Arizona	29.81	757.2	29.98	761.5	55	12.8	52	Calm	0	0		0	0			0	0	Clear.	
SUB-SERIES.																			
York Factory, B. A.	30.13	765.3	30.18	766.6	22.5	--5.3	93	E	12	5.4		5cs	0	SE		0	0	Fair	J. Fortescue. W. Wood
Havana, Cuba, W. I.	30.03	762.7	30.05	763.3	79	26.1	90	SE	2.4	1.1		4k	4n	Calm	NE	0.15	3.8	Light rain	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	81	27.2	83	Calm	0	0		2c	2s	Calm		0	0		James Gall.
Navassa, W. I.	29.90	759.4	29.98	761.5	85	29.4		E			2					0	0	Clear	F. M. Everett.
St. Thomas, W. I.					85	29.4	75	NE	18	8.0		2c	5ks	E		0.29	7.4	Hazy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.			29.98	761.5	84	28.9	75	E			2	5k	6ks	E		0	0	½ cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.21	640.3			66.2	19.0	84	Calm			0	0	2ks			0	0	Fair	Thomas Herrar.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,834 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft. or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.11	764.8	57	13.9	57	13.9	67	N	5	2.2			3		Calm	0	0			Clear	
Navy Yard, Pensacola, Fla.	30.30	769.6			59	15.0	82	NE	3	1.3			2			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.02	762.5	64	17.8	42	5.6	??	SW	8	3.6						0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.69	754.1	59	15.0	54	12.2	64	NW			2		0			0	0			Clear	
Adams, Montevideo, Uruguay	30.06	763.5	67	19.4	65	18.3	78	NNW			1		9		NW	0	0	None		D. clouds	
Alert, Oki Islands	30.54†	775.7†	53	11.7	53	11.7	73	W			2–6		8		W			Smooth		Showery	
Alliance, Constantinople, Turkey	30.10	764.5	65	18.3	60	15.6	??	NE			2		10		N&E					Overcast	
Ashuelot, Tientsin, China	30.47	773.9	58	14.4	46	7.8	84	WNW			3		1					Smooth		D. clouds	
Canonicus, New Orleans, La	30.15	765.8	46	7.8	59	15.0	88	SE			1		9		S					Cloudy	
Colorado, New York, N. Y.	30.20	767.1	72	22.2	55	12.8	74	WSW	9	4.0			4		WSW	0	0			Light Mist	
Despatch, Constantinop'e, Turkey	30.09	764.3	66	18.9	63	17.2	67	NE			3–4		10		NE					Threatening	
Franklin, Norfolk, Va.	30.31	769.9	49	9.4	53	11.7	93	SW	3	1.3			0		SW	0	0			Clear	
Frolic, Washington, D. C.	30.27	768.8	49	9.4	50	10.0	86	Calm	0	0			2k		Calm	0	0			Foggy	
Gettysburg, Messina, Italy	29.84‡	757.9‡			72	22.2	100	SSW			3		2		Calm	0	0			D. clouds	
Kearsarge, N. 11° 56′, E. 52° 35′	29.88	758.9			83	28.3	87	NNE			1		1			0	0	Smooth	E	D. clouds	
Lackawana, Port Townsend, W. T.	29.75	755.6			56	13.3	75	SE			3–5		9		SE			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.93	760.2	70	21.1	73	22.8	42	W			0		0			0	0	Smooth		Blue sky	
Michigan, Sarnia, Ontario	29.43	747.5	60	15.6	52	11.1	79	SSW			2		5		SW					Fair	
Monocacy, Yokohama, Japan	29.65	753.1	62	16.7	56	13.3	63	NW			2		10			0	0	Smooth		D. clouds	
Monongahela, N. 35° 57′, W. 9° 22′	30.27	768.8	68	20.0	68	20.0	60	NNE			5–6		ck					Smooth		D. clouds	
New Hampshire, Port Royal, S. C.	30.40	772.1			63	17.2	78	NE	14	6.3			3		SE	0	0			D. clouds	
Omaha, Valparaiso, Chili	30.05	763.3	65	18.3	61	16.1	86	Calm	0	0			10		Calm	0	0	Smooth		Hazy	
Onward, Callao, Peru	30.04†	763.0†	71	21.7	67.5	19.7	84	SE			3		4					Long	W	D. clouds	
Ossipee, New York, N. Y.	30.17	766.3	71	21.7	53	11.7	80	WSW			3		6		W					D. clouds	
Palos, Shanghai, China	30.46	773.7	57	13.9	45	7.2	54	NW			2		2		N&W					Clear	
Pensacola, Mare Island, Cal.	30.20	767.1			61	16.1	88	W			0–1		3			0	0			Cloudy	
Plymouth, Norfolk, Va.	30.00†	762.0†	54	12.2	51	10.6	86	E			1		0							Clear	
Ranger, Shanghai, China	30.54	775.7			52	11.1	73	NW			2		2		NW					Clear	
Rio Bravo, Brownsville, Texas	29.93	760.2			74	23.3	86	SE			2		4		SW					D. clouds	
Santee, Annapolis, Md.	30.24	768.1	60	15.6	56	13.3	69	W			1		2		NW	0	0			Clear	
St. Louis, League Island, Pa	30.07	763.8	53	11.7	52	11.1	??	SW	10	4.5			2		SW	0	0			Fair	
Swatara, N. 38° 42′, W. 73° 38′	30.23	767.8			62	16.7	77	W			3							Moderate.	S&W	Blue sky	
Tennessee, Yokohama, Japan	29.77	756.1	65	18.3	57	13.9	75	NNW	10	4.5			0		S&E	0	0	Smooth		D. clouds	
Trenton, Villefranche, France	29.91†	759.7†	66	18.9	64	17.8	83	S	5	2.2			10		S	1.0	25.			Raining	
Vandalia, Villefranche, France	29.84	757.9	62	16.7	62	16.7	88	S			1		10		S			Long & heavy	S	Raining	
Wabash, Boston, Mass.	30.01	762.2	57	13.9	54	12.2	67	W	11	4.9			3		W	0	0			D. clouds	
Wyoming, Washington, D. C.					56	13.3		S&W			0–1		0							Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 22° 25′, E. 115° 15′			30.37*	771.4*	74	23.3	86	ENE			3		10		ENE	Long	ENE	Overcast	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitsbury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 36° 50′, W. 125° 20′			30.16†	766.1†				WNW			2				WNW	Long	W	Fine	Capt. John Metcalf.
S. S. Gaelic, N. 45° 00′, W. 161° 51′			29.54*	750.3*	47	8.3	??	NW			5		k		NW	Long	NW	Rain & hail	Capt. W. H. Kidley.
S. S. Oceanic, N. 28° 53′, E. 129° 00′			30.02	762.5	66	18.9	84	NW			5–6		5		*NW	Moderate	NW	Squally	Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. *Aneriod. †Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andresser.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 45° 56′, W. 43° 16′	N66E	11.5	29.93	760.2	49.0	9.4	71	WNW			5		6k		W	Heavy		Overcast	Capt. K. Undütsch.
S. S. Nürnberg, N. 41° 51′, W. 62° 11′			29.99	761.7	68.0	20.0	67	WSW			6		0			Heavy	W	Fine	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 47° 53′, W. 48° 25′			29.31?*	744.5?*	42	5.6	??	SW			1		1		SW	Heavy	NNW	Squally	Captain Sargent.
S. S. Ohio, Philadelphia, Pa			30.16	766.1	70	21.1	90	SSW			1		0					Clear	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.40†	746.7†	56	13.3	94	W			5		9		WNW			Clear	Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 40° 37′, W. 70° 50′			30.25*	768.3*	58	14.4		WSW	14	6.3			0			Smooth		Clear	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Off Hog Island, Va			30.23	767.8	60	15.6	76	WSW	10	4.5			Haze			Smooth		Hazy	Capt. James Jorgensen.

* Aneroid regulated to standard at Antwerp.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

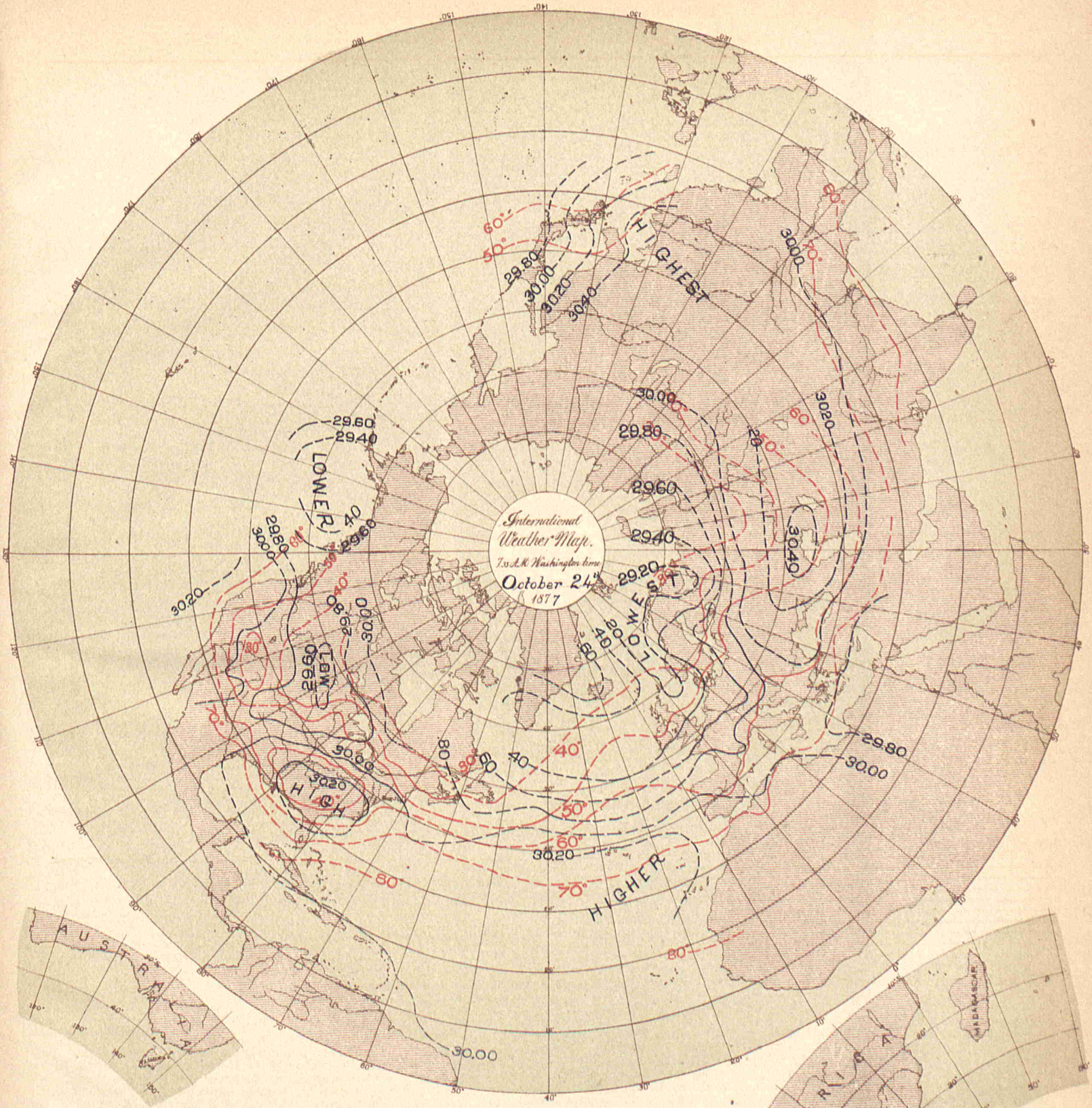
NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 25, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.10	764.6	71.6	22	62	NW			2		2			0	0	Fair	Michel.
Algiers			29.95	760.8	68.7	20.4	62	NW			1		7			0.335	8.5	Very cloudy	Peter.
La Calle			29.92	760.0	64.4	18.0	80	W			2		7			0.866	22.0	Very cloudy	Fleury.
Tunis			29.88	759.0	68.7	20.4	62	NW			4		7			0	0	Very cloudy	Jacques.
Sfax			29.95	760.7	69.8	21.0		SE			1		6			0	0	Cloudy	Husson.
Saida			30.12	765.0	60.1	15.6	47	NW			2		2			0	0	Fair	Millot.
Tebessa			29.98	761.5				NW			2		6			0	0	Cloudy	Bourgeois.
Geriville			30.07	763.8	52.5	11.4	63	NW			3		5			0	0	Cloudy	Lemaillot.
Laghouat			30.08	763.9	64.4	18.0	44	N			6		4			0	0	Cloudy	François.
Biskra			30.00	762.1	74.7	23.7	50	Calm			0		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.24	742.8	29.78	756.4	61.7	16.5	50	SW			2		2			Inap.	Inap		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.04	737.6	29.80	757.0	52.9	11.6	64	NE			2		6			0	0		Dr. Wierzbiski.
Eperies	28.94	735.1	29.82	757.3	52.9	11.6	57	S			3		7cs			0	0		Julius Mikolik.
Gratz	28.56	725.4	29.80	757.0	54.1	12.3	70	S			1		10			0	0		Andreas Rospini.
Hermannstadt	28.41	721.6	29.82	757.3	55.2	12.9	36	SE			1		3			0	0		Prof. Reissenberger.
Kremsmünster	28.39	721.2	29.74	755.4	47.5	8.6	81	E			3		10			0.157	4.0		Prof. C. Wagner.
Lemberg	28.81	731.8	29.79	756.6	54.0	12.2	74	SE			1		0			0	0		Dr. T. Stanecki.
Pola	29.07	738.5	29.78	756.3	63.1	17.3	72	SE			4		10ks			0	0		I.R.HydrographicOffice.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.54	750.2	29.81	757.2	57.6	14.2	64	W			4		5			0	0		Karl Stancel.
Trieste	29.80	756.8	29.90	759.4	60.3	15.7	85	Calm			0		10			0.433	11.0		P. Busin.
Vienna	29.10	739.2	29.80	756.8	54.0	12.2	61	N			1		10			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.09	713.4	29.59	751.6	46.9	8.3	73	SSE			4		10			0.626	15.9		Prof. M. Passau.
Brussels	29.22	742.3	29.42	747.3	52.3	11.3	74	S			6	8	2	SW	SSW	0.364	9.25		Royal Observatory.
Furnes	29.34	745.1	29.36	745.7	48.9	9.4	93	SSE			5		10			0.516	13.1	Raining	M. E. de Cae.
Maeseyck	29.37	745.9	29.50	749.2	52.3	11.3	77	S			6		10			0.425	10.8		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.35	745.5	29.45	748.0	45.3	7.4		ENE	13	5.8			7					D. clouds	W. Boswell.
Ardrossan	29.29	744.0	29.31	744.5	49	9.4		ENE			4		5					D. clouds	William McNeil.
Armagh, Observatory			29.31	744.5	49.2	9.6		E	4	1.8			10					Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.27	743.4	52.4	11.3		ESE	1	0.4			6					D. clouds	John Hartnup.
Birr Castle, (Parsonstown)			29.34	745.2	50.7	10.4		NW			1		10					Overcast	J. Dreyer.
Bradford, Yorkshire	29.89	759.2	30.29	769.4	47.9	8.8		NW			1		10			0.07	1.8	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	82	27.8		NE			2		3					D. clouds	Pvt. G. W. Roberts, A
Cambridge, Observatory			29.26	743.2	53.0	11.7		SE			1		10					Raining	H. Todd. [H. C.
Cardington			29.26	743.2	52.0	11.1		SE			1		10					Raining	John McLaren.
Chatham, School M. E.	29.09	738.9	29.22	742.2	53.2	11.8		SE			1		10					Raining	Lt.Col. C.M.Martin, R.E.
Dartmoor	27.88	708.1	29.34	745.2	48.2	9.0		W			5		5					Squally	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.27	743.4	29.30	744.2	48	8.9		NE			3		10					Overcast	J. Mac Gowan.
Dover	29.22	742.2	29.24	742.7	52	11.1		SSE			4		10					Raining	J. Costello.
Eccles, (near Manchester)			29.26	743.2	50.9	10.5		SE	0.6	0.3			10					Misty	Thomas Mackereth.
Falmouth, Observatory	29.08	738.6	29.30	744.2	55.9	13.3		NW			4		9					Overcast	The Staff.
Fort Napier, (Natal)	27.69	703.3	29.90	759.4	74.0	23.3		E			2		2					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.99	761.7	83.5	28.6		Calm			0		4					D. clouds	
Galway, Queen's College					56	13.3		W			2		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.11	764.8	72.5	22.5		W			5		1					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.17	740.9	29.38	746.2	46.0	7.8		ENE			3		9					Gloomy	D. G. Maclean.
Great Yarmouth	29.32	744.7	29.33	745.0	51	10.6		S			2		8					Drizzling	G. T. Watson.
Greenwich, Royal Obs'y	29.06	738.1	29.23	742.4	52.6	11.4		ESE			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.05	737.9	29.26	743.2	57.5	14.2		WSW			5		10					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.35	745.5	57	13.9		W			2		10n			0.46	11.7	Showery	M. P. Moyle.
Holyhead	29.25	742.9	29.30	744.2	53	11.7		NNW			3		3					D. clouds	John Tilston.
Jersey	29.00	736.6	29.28	743.7	57.5	14.2		W			6		10			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			29.22	742.2	53.1	11.7		ESE	10	4.5			10ks					Raining	The Staff.
Kingstown	29.26	743.2	29.29	744.0	52	11.1		Calm			0		10					Overcast	George Mitchell.
Leicester, Museum			29.27	743.4	52.6	11.4		SW			2		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.79	756.7	29.87	758.7	68.8	20.4		SE			2		8					Overcast	Sergt. Fred Travis, A. H. C.
Nairn	29.35	745.5	29.44	747.8	45	7.2		Calm			0		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.07	763.8	82.5	28.1		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.11	739.4	29.30	744.2	53.6	12.0		SE			2		10k;d		ESE	0.003	0.08	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.75	730.2	29.26	743.2	51.4	10.8		E			0–1		10					Threatening	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.24	742.7	54	12.2		NE			1		10					Misty	F. Lucas
Plymouth	29.16	740.7	29.23	742.4	58.5	14.7		W			2		10					Gloomy	John Merrifield.
Roche's Point	29.32	744.7	29.36	745.7	54	12.2		NW			4		5					⅜ clouded	W. Kennedy.
Saint Ann's Head	29.18	741.2	29.28	743.7	54	12.2		WNW			1		10					Showery	John O. Walker.
Sandwick Manse, (Orkneys)			29.48	748.8	43.9	6.6		N	2	0.9			3					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.87	758.7	65.6	18.7		SW			1		5					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.05	737.9	29.29	744.0	52.9	11.6		ESE			1		10			0	0	Foggy	W. F. Cooper.
Silloth Rectory	29.28	743.7	29.30	744.2	45.5	7.5 97		E			1		10			0.045	1.14	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					50.4	10.2		SE			1		10					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.41	747.0	43	6.1		ESE			1		0					Blue sky	John Smith.
Stratfield Turgiss	29.00	736.6	29.22	742.2	53.1	11.7		S			1		10					Raining	Rev. C. H. Griffith, F.M.S.
Thurso			29.43	747.5	52	11.1		ESE			1		4					D. clouds	John Trotter.
Truro, Royal Institution			29.38	746.2	57	13.9		NW			6		10					Raining	W. Newcombe.
Valencia, Observatory			29.41	747.0	54.5	12.5		NW	17	7.6			4					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					49	9.4		W			1		3			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.90	759.4	29.94	760.5	76.5	24.7 53		SSE	30	13.4		1	1						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			30.12	765.0	46.5	8.1 81		Calm			0		0			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.41	747.0	43.8	6.6		E			3		10n			0.05	1.3	Raining	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.11	764.7	77.3	25.2 60		E	14.7	6.6		4	3	Calm	SSW	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	30.05	763.3	30.14	765.5	57.2	14.0 77		NW	8	3.6			10			0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.42	747.3	48	8.9		E			3	3	0	SE		0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.42	747.3	43	6.1		N			4	3	5	NNE		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,1052 ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Moulard.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 47° 35′, W. 38° 10′			29.44	747.8	53	11.7		WSW			8		9			9		Showery	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie.
S. S. Hibernia																			Capt. W. R. Cuto.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine,																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			29.36	745.7	55	12.8		W			3		9					D. clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5			67.1	19.5	97	NE			3	8cs				0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.45	747.9	29.49	749.1	46.9	8.3	86	SSW			2		10					Raining	
Fanöe	29.38	746.3	29.40	746.8	47.7	8.7	93	S			4		9						
Godthaab, (Greenland)	29.20	741.6	29.24	742.7	30.4	—0.9	74	Calm			0		0						
Stykkisholm, (Iceland)	29.47	748.5	29.51	749.6	33.3	0.7	96	E			6		8						
Thorshavn, (Faröe)	29.50	749.2	29.53	750.1	38.7	3.7	72	NNE			2		2						
Vestervig	29.20	741.7	29.37	746.0	46.4	8.0	89	W			4		8						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	28.86	733.1	29.41	747.1	53.6	12	88	SW			4		10		W	Blank	Blank	Covered	Collignon, Director.
Amiens, Normal School	29.21	742.0	29.32	744.7	50.4	10.2	95	SE			3		10			0.047	1.2	Covered	Bonvarne, Director.
Avignon, Normal School	29.73	755.1	29.81	757.1	55.4	13	61	N			1		10			0	0	Covered	Mr. Giraud, Director.
Bar-sur-Seine	29.00	736.6	29.56	750.9	49.5	9.7	69	S			2		10			0.020	0.5	Raining	C. Saillard.
Beaumette Obs'y (Angers)	29.26	743.3	29.42	747.3	59.7	15.4	89	SW	15.7	7.0			10	SW		0.378	9.6	Raining	Albert Cheux.
Beauvais	29.09	738.9	29.37	746.0	51.1	10.6	85	S			3		10		S	0.049	1.25	Covered	Normal School.
Besançon	28.76	730.5	29.64	752.9	54.7	12.6	57	S			2		2		SW	0.307	7.8	Slightly cl'dy	Normal School.
Bourg-en-Bresse	28.85	732.9	29.76	756.0	52.3	11.3	52	S			6		10n		S	0.31	8.	Covered	Normal School.
Bourges, Normal School	29.18	741.1	29.73	755.1	51.6	10.9	90	SSW			2		10		SW	0.130	3.3	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.14	740.2	29.36	745.8	57.0	13.9	95	W			5		10		W	0.522	13.25	Raining	The Staff.
Carcassonne, Normal School	29.39	746.6	29.81	757.1	55.4	13.0	77	W			4		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.20	741.6	29.27	743.4	59.5	15.3	91	NE			6		8		NE	0.12	3.	Very cloudy	Normal School.
Chartres, Normal School	28.80	731.4	29.35	745.4	51.4	10.8	85	SW			6		5			0.20	5.		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.21	741.8	29.52	749.9	48.2	9.0	81	N			2		10			Blank	Blank	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.24	717.4	29.59	751.6	51.4	10.8	72	S			3		8		SW	0	0	Very cloudy	Allnard, Director.
Commercy, Normal School	28.77	730.7	29.05	753.1	47.5	8.6	76	SSE			2		10n		SSE	0.16	4.	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.70	729.0	29.84	758.0	55.4	13.0	51	W			2		8		W	0.953	24.2	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.29	744.0	29.50	749.3	59.0	15	96	SW			0		8		W	0.59	15.	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.10	739.0	29.40	746.7	53.1	11.7	98	SW			4		8		SW	0.409	10.40	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.78	731.0	29.77	756.2	56.3	13.5	48	S			1		5		NE	0	0	Cloudy	Pin, Director.
Lorient, Naval Observatory	29.35	745.6	29.45	748.1	60.1	15.6	83	WSW			5		10			0.354	9.0	Covered	T. Carré, Director.
Mâcon, Normal School	29.02	737.2	29.67	753.6	50.5	10.4	95	WNW			6		10			0	0	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.62	727.0	29.66	753.4	52.0	11.1	63	SW			2		10		NE	0.08	2.	Covered	Normal School.
Nismes, Normal School	29.57	751.1	29.77	756.2	61.2	16.2	86	SW			1		5		NE	0.059	1.50	Cloudy	Boyer, Director.
Orleans, Normal School	29.22	742.2	29.60	751.8	52.5	11.4	77	SSE			3		8		S	0.28	7.	Very cloudy	Bernard, Director.
Paris, Observatory	29.17	740.8	29.40	746.8	49.1	9.5	91	S			3		10n		S	0.120	3.06	Covered	National Observatory.
Privas	28.75	730.2	29.81	757.2	54.3	12.4	65	S			2		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	29.50?	749.3?	29.66?	753.3?	60.8	16.0	93	SW			6		10		SW	0.43	11.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.27	743.5	29.36	745.7	52.9	11.6	91	SSE			2		10		S	0.055	1.4	Covered	F. Lucard, Director.
Tarbes, Normal School	28.78	730.9	29.84	757.8	66.2	19	90	NW			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.16	740.7	29.88	759.0	52.2	11.2	75	SE			4		10		Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.4	28										0.12	3.		L'Abbé Marchési.
Marseilles, Observatory			29.83	757.0	57.7	14.3	46	W			1–2		10			0.059	1.50	Almost cov'd	The Staff.
Mont-Louis	24.67	626.7	29.99	761.7	42.3	5.7	46	SW	14.9	6.66			7		WSW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.11	739.5	29.39	746.5	48.7	9.3	97	S			6		10			0.256	6.5	Sprinkling	Marié Davy, Director.
Perpignan			29.81	757.2	53.8	12.1	69	W	1.9	0.83			8		NE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.06	535.0			28.0	—2.2		W			6		10					Rain & snow	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.32	566.8			32.4	0.2		W			4–6		10			0.555	14.1	Rain & snow	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.24	742.8	29.41	747.0	48.7	9.3	96	S			3		10			0.244	6.2	Raining	E. Renou.
Toulouse, Observatory	29.06	738.0	29.78	756.3	53.6	12.0	80	S			1		10			0.142	3.6	Rainy	The Staff.
Tours	29.26	743.2	29.46	748.2	53.8	12.1	94	SSW			4		10		SW	0.228	5.8		C. Marquet.
Versailles, (near Paris)			29.42	747.3	50.0	10.0	92	SW			4		10			0.240	6.11	Raining	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.41	772.3	30.43	772.9	42.3	5.7	76	W	4.9	2.2			1ck		W	0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,363 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.50	749.3	29.67	753.6	53.6	12.0	57	S			2		0			0	0		Prof. Arndt.
Breslau	29.31	744.5	29.84	757.9	44.2	6.8	93	SSE			2		10			0.062	1.58	Raining	Royal University Obs'y.
Carlsruhe	29.23	742.4	29.65	753.1	52.0	11.0	66	SW			1		1			0.201	5.1		Albert Senz.
Cassel	29.08	738.5	29.67	753.7	52.3	11.3	62	S			2		3	SW		0.064	1.62		Dr. H. Möhl.
Crefeld	29.35	745.6	29.51	749.6	52.9	11.6	72	SE			5		9			0.47	12.		Director Lose.
Emden	29.71	754.6	29.74	755.5	50.2	10.1	94	SW			3		10			0.185	4.7		Prof. Prestel.
Frankfort on the Main	29.35	745.6	29.72	754.8	54.3	12.4	35	SSW			3		7			0.047	1.2		Physical Society.
Friedrichshafen	28.29	718.6	29.72	755.0	50.0	10.0	75	SW					4	SW		0.177	4.5	Light rain	M. Wilhelm.
Hamburg	29.47	748.6	29.54	750.4	51.8	11.0	73	SW			4		8ks			0.366	9.3	Fair	Captain F. Hegemann.
Kiel	29.48	748.8	29.50	749.2	49.1	9.5	86	N			1		10			0.287	7.31		Prof. G. Karsten.
Königsberg, (Prussia)	29.65	753.1	29.73	755.1	45.5	7.5	79	SW										Cloudy	Prof. E. Luther.
Köslin			29.64	752.8	50.2	10.1		SW			2		0			0	0		H. Müller.
Leipsic, Observatory	29.32	744.8	29.74	755.4	53.1	11.7	52	SSW			3		3	W		0	0		Prof. Bruhns.
Memel, Naval School	29.64	752.9	29.69	754.1	48.0	8.9	81	SW			6		10n						Reinbrechtvon Skalweit.
Neufahrwasser	29.70	754.4	29.72	754.8	49.6	9.8	74	SW			3		10			0	0		A. Lothes.
Posen	29.52	749.8	29.81	757.2	49.6	9.8	68	SW			5		5			0	0	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.12	739.6	29.67	753.5	52.9	11.6	57	S			2		3	W		0.100	2.53		Dr. Schur.
Stuttgart	28.75	730.3	29.69	754.0	53.6	12.0	48	SW			1		1			0.031	0.8	Raining	Prof. Schoder.
Treves, (Trier)	28.98	736.1	29.50	749.2	52.3	11.3	63	SW			6		10			0.209	5.32		Prof. Flesch.
Weissenburg, (Bavaria)	28.21	716.6	29.71	754.6	50.4	10.2	100	SSE			2		5k		S	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.59	751.6	29.63	752.6	52.2	11.2	72	S			4		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.55	750.5	29.93	760.3	66.2	19.0		SW										Clear	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India,

Kurrachee	29.01	759.8	29.96	761.0	86.1	30.1	34	WSW	12.0?	5.4?			0			0	0	Blue sky	
Deesa	29.52	749.8	29.99	761.8	86.5	30.3	36	Calm					0			0	0	Blue sky	
Bombay	29.89	759.1	29.92	760.0	80.9	27.2	81	S	11.0	4.9			8	SW	SSW	0	0	Misty	
Poona	27.93	709.3	29.95	760.5	74.4	23.6	82	E					10		S	0.17	4.3	Gloomy	
Lahore	29.26	743.3	30.02	762.4	77.9	25.5	31	Calm	1.2	0.5			5			0	0	Misty	
Belgaum	27.40	695.8	29.97	761.2	70.8	21.6	87	N	14.0	6.3			9		E	0.17	4.3	Threatening	
Bangalore																			
Roorkee	29.09	738.9	30.00	762.0	75.8	24.3	35	Calm	1.5	0.7						0	0		
Agra	29.42	747.2	29.99	761.7	78.8	26.0	34	NW								0	0		
Trichinopoly																			
Nagpur	28.94	735.1	29.96	761.0	73.6	23.1	91	Calm	3.2	1.4			9			0.08	2.0	Thunder-storm	
Madras																			
Lucknow	29.64	752.9	30.02	762.6	71.3	21.8	62	Calm	0.3	0.1			8	E		0	0	D. clouds	
Allahabad	29.60	754.0	30.00	762.1	72.5	22.5	53	Calm	0.3	0.1			1			0	0	D. clouds	
Patna	29.82	757.4	30.00	762.1	77.5	25.3	44	W	1.0	0.4			10	W	W	0	0	Overcast	
Hazaribagh	27.96	710.2	30.00	762.1	72.8	22.7	43	NNW	2.4	1.1			10			0	0	Overcast	
Cuttack	29.88	759.0	29.97	761.1	80.0	26.7	66	NNE	2.4	1.1						0	0	Blue sky	
Calcutta (Alipore)	29.95	760.7	29.97	761.3	73.6	23.1	72	N	4.0	1.8			0			0	0	Blue sky	
Goalpara	29.54	750.2	29.93	760.2	77.3	25.2	69	NE	4.4	2.0			9	W		0	0	D. clouds	
Chittagong	29.81	757.2	29.90	759.6	84.7	29.3	93	W	7.1	3.2			8			0	0	Misty	
Sibsagar	29.66	753.3	30.00	761.9	76.3	24.6	79	ENE	1.3	0.6			10			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.64	727.5	30.03	762.8	75.0	23.9	66	NE	2.7	1.2			7	NE		0	0	Overcast	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	21.95	557.6	29.83	757.7	30.0	— 1.1	78	ESE			1		6	NE		0	0		Ab. Don. Morgini.
Stelvio	21.93	557.1	29.87	758.6	31.8	— 0.1		WSW			2		10			0.610	15.5		Signora Ernesta Manfredi.
Udine	29.40	746.7	29.82	757.3	52.2	11.2	87	N	2.5	1.1			10			0.244	6.2		Prof. Giovanni Clodig.
Padua	29.66	753.4	29.77	756.2	54.1	12.3	94	NE	8.7	3.9			10	NE		0.098	2.5		Prof. Dott. Lorenzoni.
Vicenza	29.60	751.8	29.80	756.8	51.1	10.6	99	N	3.8	1.7			10	W		0.772	19.6		Conte Alm. Da Schio.
Verona	29.56	750.7	29.78	756.4	56.5	13.6	87	NE	0	0			10			0.669	17.0		Dott. B. Bertoncelli.
Bergamo	28.48	723.5	29.81	757.2	50.7	10.4	87	NW			1		10			1.087	27.6		Prof. Trionfini Carlo.
Domodossola	28.75	730.3	29.80	756.8	55.4	13.0	86	NW			2		2			0	0		Prof. Giuseppe Calza
Milan	29.20	744.0	29.82	757.3	51.1	10.6		NE			1		10			0.146	3.7		Ab. Gio. Capelli.
Pavia	29.47	748.4	29.82	757.3	49.9	9.9	99	SW			1		10			0.760	19.3		Prof. Gio. Cantoni.
Moncalieri	28.89	733.7	29.81	757.2	54.3	12.4	88	SSE	6.3	2.8			3	NW		0	0		Prof. P. F. Denza.
Mondovi	27.89	708.3	29.82	757.4	52.2	11.2	58	NW			2		0			0.433	11.0		Prof. D. C. Bruno.
Porto Maurizio	29.57	751.1	29.79	756.7	62.2	16.8	68	SW			4		8	SW		0.791	20.1		Prof. L. Vassallo.
Genoa	29.59	751.6	29.76	755.9	57.4	14.1	58	N	8.7	3.9			10	S		0.870	22.1		Prof. G. M. Garibaldi
Piacenza	29.56	750.7	29.81	757.2	49.1	9.5	94	NW	9.4	4.2			10			0.315	8.0		Dott. G. Manzi.
Parma	29.46	748.3	29.77	756.2	51.6	10.9	89	WNW			4		10			0.157	4.0		Prof. P. Pigorini.
Florence	29.52	749.9	29.78	756.5	61.7	16.5	78	E			2		10			0.559	14.2		Cav. F. Meucci.
Leghorn	29.67	753.5	29.75	755.7	62.6	17.0	68	W	2.5	1.1			5	WSW		0.965	24.5		Prof. P. Monte.
Siena	28.56	725.5	29.82	757.4	52.7	11.5	97	ESE	0.7	0.3			10	SW		0.402	10.2		Prof. L. Toscani.
Urbino	28.27	718.1	29.85	758.1	55.0	12.8	66	SW			2		10			0.020	0.5		Prof. P. Serpieri.
Pesaro	29.73	755.1	29.78	756.4	58.8	14.9	78	W	0	0			10			0	0		Prof. Luigi Guidi.
Ancona	29.68	753.8	29.78	756.5	59.0	15.0	68	SE			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.68	753.8	29.79	756.7	57.9	14.4	95	NNE			2		7	SE		0.728	18.5		Avv. P. Ponticelli.
Rome	29.60	751.7	29.77	756.2	59.4	15.2	87	S	13.0	5.8			10			0.157	4.0		Prof. P. A. Secchi.
Naples, O. U.	29.62	752.4	29.82	757.5	68.0	20.0	56	SW			2		9	SE		0.039	1.0		Prof. L. Palmieri.
Lecce					66.0	18.9	57	SSE	9.4	4.2			6	S		0	0		Prof. C. De Giorgi.
Cosenza	28.99	736.4	29.89	759.1	63.0	17.2	78	NE	0	0			1			0	0		Prof. F. D. Conti.
Cagliari	29.57	751.1	29.76	755.9	64.4	18.0		N			6		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)					65.1	18.4	65	Calm			0		5			0	0		Prof. F. Cafiero.
Palermo	29.54	750.2	29.79	756.7	66.6	19.2	68	NE	2.5	1.1			10			0	0		Prof. G. Cacciatore.
Caltanissetta	27.93	709.3	29.86	758.5	61.2	16.2	61	SSE			2		4			0.063	1.6		Prof. A. Pagani.
Syracuse	29.73	755.2	29.81	757.1	65.5	18.6	77	SSE			1		10	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.32	744.6	29.87	758.7	65.3	18.5	60	NE	1.8	0.8			7			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by an 8 scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 553 m., or 1,814.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.75	755.6	29.85	758.3	47	8.3	77	N	5	2.2						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.13	587.4	30.17	766.3	52.9	11.6	75	W	0.5	0.22		0	0			0	0	Fair	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pubellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,522.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,593 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.39	746.6	29.39	746.6	51.4	10.8		SSE			4					0	0		
Groningen	29.39	746.6	29.45	748.0	50.0	10.0		S			4					0.232	5.9		
Helder	29.39	746.6	29.39	746.6	50.2	10.1		S			4					0.484	12.3		
Hellevoetsluis			29.39	746.6	50.9	10.5	88	SSE			4								
Utrecht	29.40	746.7	29.45	747.9	51.6	10.9	79	S			5		8			0.165	4.2	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.19	741.3	29.24	742.7	42.8	6.0	70	NNW	23.7	10.6	.....	.....	3	.....	.....	0	0	.....	
Brône	29.09	738.9	29.13	739.9	33.8	1.0	89	SE	9	4	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.10	739.0	29.24	742.7	39.7	4.3	87	S	4	2	.....	.....	10	.....	.....	0.949	24.1	Light fog	
Tromsô	29.13	739.9	29.17	741.0	29.5	— 1.4	53	SW	4	2	.....	.....	6	.....	.....	0.039	1.0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.94	760.5	30.13	765.3	66.7	19.3	94	NNW	4.3	1.9	.....	.....	6	.....	.....	0.197	5.0	.....	Dr. J. A. Sampaio
Campo Major	29.09	738.8	30.11	764.8	61.9	16.6	85	WSW	11.9	5.3	.....	.....	10	WSW	.....	0.169	4.3	Raining	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.15	765.8	30.22	767.6	71.6	22.0	59	SE	9.8	4.4	.....	.....	3	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.77	756.1	30.13	765.2	64.8	18.2	83	WSW	19.9	8.9	.....	.....	10	.....	.....	0.039	1.0	Light rain	The Staff.
Ponta Delgada, (Azores)	30.12	765.0	30.19	766.8	69.1	20.6	92	WSW	6.9	3.1	.....	.....	10	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.39	746.4	29.81	757.2	47.1	8.4	77	SW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.35	745.5	29.77	756.2	48.6	9.2	80	SW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.30	744.1	29.54	750.3	46.0	7.8	82	SW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.43	747.5	29.45	747.9	46.6	8.1	76	SSW	20	9	.....	.....	10	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	28.80	731.6	29.13	739.8	35.2	1.8	100	SE	18	8	.....	.....	10	.....	.....	.....	.....	Raining	Ch. Forsten.
Kieff	29.31	744.5	29.96	760.9	43.5	6.4	88	SSE	11	5	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.93	760.2	30.00	762.0	54.3	12.4	72	E	4	2	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.96	761.0	29.98	761.5	63.9	17.7	70	E	4	2	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.48	748.8	30.04	762.9	48.9	9.4	54	SSW	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.92	760.0	30.12	765.1	56.1	13.4	53	ESE	22	10	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.52	749.8	29.54	750.3	33.4	0.8	82	W	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.82	732.0	30.26	768.5	52.5	11.4	87	SE	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Physical Observatory.
Astrakhan	30.47	774.0	30.39	771.9	47.7	8.7	53	ESE	20	9	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Kasan	29.91	759.7	30.19	766.7	48.4	9.1	65	SW	2	1	.....	.....	8*	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	29.85	758.1	30.24	768.1	30.6	— 0.8	.....	E	7	3	.....	.....	0	.....	.....	.....	.....	.....	Tschernischei.
Ekaterinburg	29.08	738.6	30.05	763.2	38.7	3.7	87	W	27	12	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.12	765.1	30.36	771.2	46.4	8.0	46	NE	9	4	.....	.....	1	.....	.....	.....	.....	.....	
Kasaly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bobrof.
Tashkend	28.67	728.2	30.42	772.7	48.2	9.0	88	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.81	757.1	30.36	771.2	25.3	— 3.7	73	SW	0	0	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.75	755.7	29.90	759.4	38.3	3.5	72	SW	13	6	.....	.....	5	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Oorga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mossin.
Peking, (China)	30.15	765.8	30.29	769.4	46.0	7.8	42	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	29.3	— 1.5	76	W	4	2	.....	.....	8	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.: Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Domingo Martin y Perez.
Madrid, Royal Observatory	27.76	705.0	29.98	761.6	55.6	13.1	81	SW	22.4	10.00	.....	1	9	.....	.....	0	0	Covered	The Staff.
Murcia, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.4	30.06	763.4	77.8	25.4	91	Calm	0	0	.....	1c	.....	.....	.....	0.039	1.0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.11	764.7	30.20	767.2	64.9	18.3	64	WNW	15.2	6.8	.....	0	9	.....	NNW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	.....	.....	29.93	760.1	83.1	28.4	85	E	4.4	1.96	.....	2kn	2kn	SE	SE	0	0	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Low'r 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.31	744.4	29.35	745.4	21.9	— 5.6		NW			2		4			0	0		
Umea	29.26	743.1	29.31	744.4	30.6	— 0.8	100	N			4		10					Snowing	
Hernosand	29.15	740.4	29.20	741.7	33.4	0.8	95	NNW			4		10			0	0		
Stockholm	29.10	739.2	29.28	743.7	44.6	7.0	94	SSW			2		10			0.051	1.3	Foggy	
Wisby	29.37	745.9	29.43	747.4	48.2	9.0	73	W			7		7			0.083	2.1		
Sub-Series.																			
Upsala	29.20	741.6	29.27	743.5	39.9	4.4	98	WSW	1.6	0.7			10			0.150	3.80	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.32	719.2	29.74	755.5	52.7	11.5	60	S			1		2			0.913	23.2		The Observatory.
Zurich	28.09	713.5	29.74	755.3	52.2	11.2	73	W			1		9			0.138	3.5	Cloudy	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —6.9 mm; Thermometer, +0.5 cent.; Relative Humidity, —14 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.91	759.7	63.5	17.5	68	S	4	2.0			4		NE	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.97	761.2	66.0	18.9		NE			1		0						B. Stéfanidès.
Valona			29.93	760.2	77.7	25.4		W			1		5			0	0	Cloudy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.92	759.9	74.8	23.8	75	SW			4		8n		SW	2.09	53.1	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.																			Hon. J. Ferguson.
Brockville, Ontario			29.96	761.0	32	0.0		NE	8	3.6			10s		NE	0.06	1.5	Light rain	W. R. Bigg.
*Chatham, N. B.			30.08	764.0	28	— 2.2	88	N	3	1.3		5cs	5ks	NW	NW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.			30.05	763.3	39	3.9	72	Calm	0	0		0	5s		Calm	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.76	755.9	29.96	761.0	31.0	— 0.6	100	NE			3		10n			0.540	13.72	Snowing	James Smith, M. A.
Dalhousie, N. B.	30.08	764.0	30.11	764.8	24	— 4.4	84	NW			1					0	0	Bright	H. A. Johnson.
Esquimault, B. C.	29.75	755.6	29.79	756.7	49.3	9.6	100	SW					10			0.50	12.7	Rainy	W. H. Bevis.
*Father Point, Quebec			30.14	765.5	29	— 1.7	64	N	16	7.2		2cs	0	NW		0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.06	763.5	30.13	765.3	33	0.6	61	NE	5	2.2			10s			Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry, Manitoba			29.84	757.9	42	5.6	96	SE	8	3.6		5k	5n	SE	SE	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.06	738.1	29.85	758.2	54.9	12.7	94	SW			1		10s;n			0	0	Threatening	H. J. Strang, M. A
Granton, Ontario	28.75	730.2	29.81	757.9	51	10.6	86	SE			1		10n			0.10	2.5	Cloudy	James Grant.
*Halifax, N. S.	29.88	758.9	30.02	762.5	35	1.7	99	NE	7	3.1			10n			0.142	3.61	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.51	749.5	29.88	758.9	54.9	12.7	74	SW			2	8ck	0	E		0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.82	757.4	29.85	758.2	33	0.6	70	NW			4	0	0			0	0	Fine	E. Weedon.
*Kingston, Ontario	29.59	751.6	29.97	761.2	35	1.7	91	NE	8	3.6			10ks		NE	0.03	0.8	Cloudy	S. Woods, M. A
*Montreal, Quebec	29.78	756.4	29.99	761.7	32	0.0	97	NE	6	2.7			10n		Calm	0.80	20.3	Light snow	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.24	742.7	29.96	761.0	34	1.1	89	NE	17	7.6			10n		NE	0.38	9.7	Light rain	Rev. R. Mosley
Peterboro, Ontario	29.08	738.6	29.84	757.9	38.5	3.6	81	E			1		10n					Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.17	740.9	29.84	757.9	55	12.8	87	SW	12	5.4		5ck	0	SW		0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.98	761.5	30.03	762.7	35.6	2.0		E	6	2.7						0.20	5.1	Dark	Peter Grant
Port Stanley, Ontario	29.28	742.4	29.86	758.4	55	12.8	87	W	15	6.7		5k	0	W		0	0	Fair	M. Payne.
*Quebec, Quebec	29.74	755.4	30.07	763.8	32	0.0	79	NE	21	9.4			10n		NE	Inap.	Inap.	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.59	751.6	30.07	763.8	31	— 0.6	99	SE	6	2.7			10n			0.21	5.3	Light snow	W. H. McIntyre.
St. John, N. B.	29.87	758.7	30.04	763.0	32	0.0	89	N	9	4.0			10n			0.16	4.1		G. Murdock, C. E.
*Saugeen, Ontario	29.12	739.6	29.82	757.4	43	6.1	92	SW	7	3.1			10s			0	0	Cloudy	K. Stewart.
Stayner, Ontario			29.89	759.2	43	6.1	87	E	8	3.6			10n		E	Inap.	Inap.	Threatening	R. J. Cole.
Stratford, Ontario	28.56	725.4	29.83	757.7	50.3	10.2	84	SW	5	2.2			10s			0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	30.01	762.2	30.04	763.0	39	3.9	72	NW	1	0.4		8ck	2s	W	W	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.49	749.0	29.87	758.7	47	8.3	94	NE	6	2.7			10n		E	0.08	2.0	Light rain	Magnetic Observatory.
Windsor, N. S.	29.95	760.7	30.05	763.3	34.0	1.1	95	N	1	0.4			10n			0.36	9.1	Snowing	Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					33.5	0.8	80	NW				0	0			Inap.	Inap.	Fair	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.66	753.4	29.89	759.2	48	8.9	77	S	3	1.3			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.28	743.7	29.94	760.5	38	3.3	100	NE	8	3.6			10n		Calm	0.22	5.6	Light rain	
Atlantic City, New Jersey	29.96	761.0	29.98	761.5	56	13.3	74	SW	8	3.6		10c	0	W		0	0	Cloudy	
Augusta, Georgia	29.94	760.5	30.12	765.0	57	13.9	87	Calm	0	0			10s; fg		8 ;Calm	0	0	Foggy	
Baltimore, Maryland	29.97	761.2	30.02	762.5	53	11.7	73	SW	2	0.9		8c	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	29.94	760.5	29.96	761.0	54	12.2	86	W	9	4.0		8cs	0	W		0.02	0.5	Fair	
Bismarck, Dakota	27.86	707.6	29.52	749.8	37	2.8	90	E	8	3.6			10s		N	0	0	Cloudy	
Boise City, Idaho	27.07	687.6	29.63	752.6	50	10.0	86	NE	4	1 8			10s		W	0.18	4.6	Cloudy	
Boston, Massachusetts	29.77	756.1	29.93	760.2	50	10.0	86	N	6	2.7			10s			0	0	Cloudy	
Brackettville, Texas	28.70	729.0	29.72	754.9	60	15.6	70	Calm	0	0		10k	0	Calm		0.03	0.8	Cloudy	
Breckenridge, Minnesota	28.78	731.0	29.77	756.1	42	5.6	100	SE	19	8.5			Fog		Calm	0	0	Foggy	
Brownsville, Texas	29.77	756.1	29.83	757.7	77	25.0	90	S	12	5.4			10s		Calm	0.03	0.8	Cloudy	
Buffalo, New York	29.15	740.4	29.84	757.9	56.0	13.3	87	SW	12	5.4			10s		SW	0.04	1.0	Cloudy	
Burlington, Vermont	29.68	753.9	29.94	760.5	37	2.8	100	N	5	2.2			10n		Calm	0.42	10.7	Light rain	
Cairo, Illinois	29.62	752.3	30.01	762.2	54	12.2	86	S	6	2.7			10s		Calm	0	0	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona																			
Campo, California																			
Cape Hatteras, N. Carolina	30.06	763.5	30.07	763.8	61	16.1	82	NW	2	0.9		2cs	0	SW		0	0	Fair	
Cape Henry, Virginia	30.02	762.5	30.04	763.0	56	13.3	62	W	15	6.7		5c	0	W		0	0	Fair	
Cape Lookout, N. Carolina	30.12	765.0	30.13	765.3	60	15.6	76	NW	8	3.6		2ck;cs	0	N		0	0	Fair	
Cape May, New Jersey	29.96	761.0	29.99	761.7	59	15.0	70	SW	22	9.8		5c	0	W		0	0	Fair	
Charleston, South Carolina	30.08	764.0	30.14	765.5	66	18.9	90	NE	3	1.3			10s		SW	0	0	Cloudy	
Cheyenne, Wyoming	23.89	606.8	29.83	757.7	41	5.0	42	W	12	5.4		5ck	0	NW		0	0	Fair	
Chicago, Illinois	29.12	739.6	29.80	756.9	55	11.7	86	SW	6	2.7			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.31	744.5	29.95	760.7	54	12.2	73	S	2	0.9		8ck	Fog	S	S	0	0	Cloudy	
Cleveland, Ohio	29.22	742.2	29.93	760.2	56	13.3	62	S	12	5.4		2c	2s	Calm	SW	0.02	0.5	Fair	
Concho, Texas					57	13.9	63	SW	4	1.8		8c	0	SW		0	0	Clear	
Corsicana, Texas	29.38	746.2	29.83	757.7	63	17.2	100	SE	1	0.4			10s		Calm	1.42	36.1	Cloudy	
Davenport, Iowa	29.22	742.2	29.85	758.2	50	10.0	93	Calm	0	0			Fog		Calm	0	0	Foggy	
Denison, Texas	29.02	737.1	29.80	756.9	61	16.1	100	S	10	4.5			Fog		S	1.55	39.4	Dense fog	
Denver, Colorado	24.66	626.4	29.88	758.9	37	2.8	62	S	8	3.6		0	0			0	0	Clear	
Detroit, Michigan	29.18	741.2	29.84	757.9	53	11.7	79	SW	7	3.1		5cs	0	SW		0	0	Fair	
Dodge City, Kansas	27.21	691.1	29.48	748.8	44	6.7	84	NW	7	3.1		2c	0	NW		0	0	Clear	
Dubuque, Iowa	29.15	740.4	29.85	758.2	45	7.2	92	Calm	0	0			Fog		Calm	0	0	Foggy	
Duluth, Minnesota	29.25	742.9	29.93	760.2	43	6.1	83	SE	28	12.5			10ks		E	Inap.	Inap.	Threatening	
Eagle Pass, Texas	29.07	738.4	29.80	756.9	63	17.2	94	S	4	1.8			10s		S	0.03	0.8	Cloudy	
Eastport, Maine	29.98	761.5	30.04	763.0	33	0.6	100	NE	19	8.5			10n			0.38	9.7	Light snow	
Erie, Pennsylvania	29.16	740.7	29.87	758.7	54	12.2	79	S	8	3.6			10s		SW	0.04	1.0	Cloudy	
Escanaba, Michigan	29.30	744.2	29.96	761.0	38	3.3	90	NE	14	6.3			10s		NE	0.06	1.5	Threatening	
Florence, Arizona	28.41	721.6	30.01	762.2	50	10.0	64	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.03	610.4	30.03	762.7	42	5.6	58	NW	4	1.8		0	0			0	0	Clear	
Fort Craig, New Mexico	25.50	647.7			35	1.7	90	N	1	0.4		0	0			0.13	3.3	Clear	
Fort Gibson, Indian Ter	29.25	742.9	29.78	756.4	57	13.9	87	S	7	3.1			10s		S	0.22	5.6	Cloudy	
Fort Griffin, Texas	28.57	725.7	29.83	757.7	54	12.2	86	W	8	3.6		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.57	725.7	29.65	753.1	59	15.0	94	Calm	0	0			10s		SW	0.01	0.3	Threatening	
Fort Sully, Dakota	28.02	711.7	29.68	753.9	38	3.3	90	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	29.81	757.2	29.85	758.2	70	21.1	97	N	4	1.8			10s		W	5.03	127.8	Threatening	
Grand Haven, Michigan	29.18	741.2	29.81	757.2	56	13.3	90	SW	5	2.2			10s		Calm	0	0	Cloudy	
Indianapolis, Indiana	29.14	740.1	29.90	759.4	55	12.8	73	S	2	0.9			10s		SW	0	0	Cloudy	
Indianola, Texas	29.82	757.4	29.85	758.2	69	20.6	100	NE	6	2.7			Fog		Calm	0.77	19.6	Foggy	
Jacksboro, Texas																			
Jacksonville, Florida	30.09	764.3	30.11	764.8	72	22.2	85	NE	3	1.3		8k	0	SW		0	0	Threatening	
Keokuk, Iowa	29.20	741.7	29.80	756.9	55	12.8	93	Calm	0	0			10n		Calm	0.18	4.6	Light rain	
Key West, Florida	30.01	762.2	30.05	763.3	81.0	27.2	82	E	5	2.2		1c	1ks	Calm	E	0	0	Smoky	
Kittyhawk, North Carolina	30.08	764.0	30.11	764.8	58	14.4	87	W	8	3.6		2cs	5s	W	W	0	0	Fair	
Knoxville, Tennessee	29.10	739.1	30.13	765.3	43	6.1	91	NE	3	1.3			Fog		Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.13	739.9	29.85	758.2	58	14.4	30	N	3	1.3			10s		Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	42	5.6	74	Calm	0	0		0	0			0.08	2.0	Clear	
Laredo, Texas					67	19.4	94	Calm	0	0		10ck	0	S		0.08	2.0	Cloudy	
Leavenworth, Kansas	28.94	735.1	29.75	755.6	59	15.0	94	S	3	1.3			10s		Calm	0.09	2.3	Cloudy	
Los Angeles, California	29.67	753.6	30.01	762.2	55	12.8	79	Calm	0	0		0	0			0	0	Clear	
Louisville, Kentucky	29.42	747.3	29.98	761.5	55	12.8	79	SE	6	2.7		8c	Fog	S	Calm	0	0	Cloudy	
Lynchburg, Virginia	29.36	745.7	30.05	763.3	52	10.6	59	W	1	0.4		5c	0	S		0	0	Fair	
Maricopa Wells, Arizona					48	8.9	32	W				0	0			0	0	Clear	
Marquette, Michigan	29.22	742.2	29.93	760.2	43	6.1	75	NE	16	7.2			10s		NE	0	0	Cloudy	
Mason, Texas	28.24	717.3	29.96	761.0	59	15.0	87	Calm	0	0		0	5s					Fair	
Memphis, Tennessee	29.68	753.9	29.99	761.7	55	12.8	87	SE	1	0.4			10n		SE	0.03	0.8	Light rain	
Milwaukee, Wisconsin	29.19	741.4	29.87	758.7	49	9.4	93	NW	3	1.3			Fog			0	0	Foggy	
Mobile, Alabama	30.02	762.5	30.07	763.8	64	17.8	86	S	3	1.3			10s		SW	0	0	Cloudy	
Montgomery, Alabama	29.84	757.9	30.08	764.0	58	14.4	84	SE	2	0.9		10cs	Haze	SW		Inap.	Inap	Cloudy	
Morgantown, West Virginia	28.86	733.0	30.02	762.5	51	10.6	65	S	8	3.6		2c	0	W		0	0	Fair	
Mt. Washington, N. H.	23.59	599.2	29.95	760.7	30	— 1.1	100	NW	50	22.4			10n		NW	0.58	14.7	Sleeting	
Nashville, Tennessee	29.52	749.8	30.06	763.5	51	10.6	86	Calm	0	0		10cs	0	SW		0	0	Cloudy	
New Haven, Connecticut	29.80	756.9	29.91	759.7	57	13.9	75	SW	5	2.2			10s		Calm	0	0	Cloudy	
New London, Connecticut	29.89	759.2	29.94	760.5	58	14.4	81	SW	8	3.6		5cs	1s	N	Calm	0	0	Fair	
New Orleans, Louisiana	29.88	758.9	29.94	760.5	67.5	19.7	92	E	12	5.4			10n		S	0.03	0.8	Light rain	
Newport, Rhode Island	29.87	758.7	29.92	760.0	59	15.0	81	SW	11	4.9			10s		W	0	0	Threatening	
New York, New York	29.76	755.9	29.94	760.5	53	11.7	86	SW	10	4.5		10ck	Fog	SW		0	0	Cloudy	
Norfolk, Virginia	30.02	762.5	30.08	764.0	51	10.6	86	SW	8	3.6		1c	Haze		Calm	0	0	Clear	
North Platte, Nebraska	26.91	683.5	29.53	750.0	31	— 0.6	89	NW	12	5.4		0	0			0	0	Clear	
Olympia, Washington Ter.	29.76	755.9	29.80	756.9	50	10.0	93	S	4	1.8			10n		S	0.65	16.5	Light rain	
Omaha, Nebraska	28.68	728.5	29.75	755.6	45	7.2	96	Calm	0	0			Fog		Calm	0	0	Foggy	
Oswego, New York	29.54	750.3	29.86	758.4	48	8.9	92	NE	4	1.8			10s; sm		Calm	0.04	1.0	Cloudy	
Pembina, Dakota	28.96	735.6	29.79	756.7	42	5.6	91	SE	9	4.0			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	29.93	760.2	29.98	761.5	52	11.1	86	SW	12	5.4		8c	0	W		0	0	Fair	
Phœnix, Arizona					49	9.4	77	S				0	0			0	0	Clear	
Pike's Peak, Colorado	17.62	447.5	29.84	757.9	9	—12.8	60	N	24	10.7		0	2s		Calm	0.11	2.8	Clear	
Pioche, Nevada	24.12	612.6	29.89	759.2	36	2.2	61	W	1	0.4		10k	0	NW		0	0	Cloudy	
Pittsburg, Pennsylvania	29.15	740.4	29.95	760.7	54	12.2	67	W	4	1.8		5c;k	0	NW; W		0	0	Fair	
Port Huron, Michigan	29.18	741.2	29.83	757.7	51	10.6	78	SW	8	3.6			10ks		SW	0	0	Cloudy	
Portland, Maine	29.93	760.2	29.98	761.5	45	7.2	92	NE	14	6.3			10s		Calm	Inap.	Inap.	Threatening	
Portland, Oregon	29.86	758.4	29.96	761.0	52	11.1	93	S	6	2.7			10s		S	0.05	0.8	Cloudy	
Prescott, Arizona	24.85	631.2	30.21	767.3	42	5.6	56	W				0	0			0	0	Clear	
Punta Rassa, Florida	30.07	763.8	30.08	764.0	74	23.3	81	E	8	3.6		8cs	0	Calm		0	0	Cloudy	
Red Bluff, California	29.70	754.4	30.05	763.3	60	15.6	88	N	2	0.9			10n		W	0.10	2.5	Light rain	
Rochester, New York	29.21	741.9	29.81	757.2	55	12.8	80	SW	5	2.2			10s		W	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.43	747.5	30.00	762.0	53	11.7	96	Calm	0	0	.....	2k	0	SW	.....	0.18	4.6	Fair	
Sacramento, California	29.97	761.2	30.06	763.5	60	15.6	76	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.33	745.0	29.89	759.2	57	13.9	81	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Florida	30.06	763.5	30.08	764.0	60	15.6	94	Calm	0	0	.....	8k	0	W	.....	0	0	Fair	
St. Paul, Minnesota	29.01	736.8	29.84	757.9	45	7.2	76	NE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salt Lake City, Utah	25.72	653.3	30.05	763.3	45	7.2	69	S	4	1.8	.....	.....	10s	.....	Calm	0.59	15.0	Cloudy	
San Antonio, Texas	29.15	740.4	29.72	754.9	66	18.9	94	NE	3	1.3	.....	.....	10ks	.....	S	0.26	6.6	Cloudy	
San Diego, California	29.96	761.0	30.03	762.7	58	14.4	81	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.24	742.7	29.91	759.7	56	13.3	68	SW	12	5.4	.....	5c	1s	W	Calm	0	0	Fair	
Sandy Hook, New Jersey	29.92	760.0	29.94	760.5	57	13.9	81	W	10	4.5	.....	10ck	Haze	W	.....	0	0	Cloudy	
San Francisco, California	30.03	762.7	30.10	764.5	58	14.4	97	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Santa Fé, New Mexico	23.23	590.0	29.77	756.1	32	0.0	95	NE	1	0.4	.....	0	Haze	.....	Calm	0.05	1.3	Cloudy	
Savannah, Georgia	30.02	762.5	30.11	764.8	66	18.9	90	SE	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Shreveport, Louisiana	29.67	753.6	29.88	758.9	60	15.6	94	SE	2	0.9	.....	.....	10s	.....	Calm	0.50	12.7	Cloudy	
Smithville, North Carolina	30.13	765.3	30.16	766.1	59	15.0	81	NW	4	1.8	.....	5cs	2ks	W	SW	0	0	Cloudy	
Springfield, Massachusetts	29.70	754.4	29.83	757.7	55	12.8	80	S	1	0.4	.....	.....	10s	.....	S	0	0	Cloudy	
Stanwix, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton, Texas	26.93	684.0	29.93	760.2	54	12.2	79	W	12	5.4	.....	.....	10s	.....	W	0.04	1.0	Cloudy	
Thatcher's Island, Mass	29.89	759.2	29.94	760.5	50	10.0	86	NE	12	5.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Toledo, Ohio	29.21	741.9	29.88	758.9	55	12.8	74	S	9	4.0	.....	2cs	Haze	W	Calm	0	0	Fair	
Tucson, Arizona	27.55	699.8	30.10	764.5	48	8.9	64	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.08	764.0	30.11	764.8	71	21.7	90	E	8	3.6	.....	.....	10ks	.....	SW	0	0	Cloudy	
Umatilla, Oregon	29.57	751.1	.....	.....	43	6.1	83	SE	4	1.8	.....	5c	0	Calm	.....	0	0	Fair	
Vicksburg, Mississippi	29.71	754.6	29.97	761.2	61	16.1	94	NE	2	0.9	.....	.....	10n	.....	NE	0.43	10.9	Light rain	
Virginia City, Montana	24.08	611.6	29.56	750.8	41	5.0	73	W	4	1.8	.....	.....	10s	.....	W	0.03	0.8	Cloudy	
Visalia, California	29.75	755.6	30.12	765.0	50	10.0	86	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.92	760.0	30.02	762.5	48	8.9	85	SW	1	0.4	.....	8ck	Sm'e	W	SW	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	39	3.9	37	S	.....	.....	.....	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.06	763.5	30.14	765.5	56	13.3	87	Calm	0	0	.....	10c	Fog	W	Calm	0	0	Cloudy	
Winnemucca, Nevada	25.66	651.8	30.02	762.5	49	9.4	71	SW	13	5.8	.....	2k	0	SW	.....	0	0	Fair	
Wood's Holl, Mass	29.91	759.7	29.96	761.0	59	15.0	87	SW	11	4.9	.....	.....	10s	.....	SW	0	0	Cloudy	
Yankton, Dakota	28.52	724.4	29.82	757.4	34	1.1	89	Calm	0	0	.....	2cs	0	SW	.....	0	0	Fair	
Yuma, Arizona	29.86	758.4	30.02	762.5	61	16.1	45	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	30.14	765.5	30.19	766.8	16.0	—8.9	92	SE	14	6.3	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.97	761.2	29.99	761.7	79	26.1	86	SE	2.4	1.1	.....	4c	0	Calm	.....	0.05	1.3	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	81	27.2	74	Calm	0	0	.....	5c	2s	SE	Calm	0	0	.....	James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	85	29.4	.....	E	.....	.....	3	.....	.....	.....	.....	0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.	.....	.....	.....	.....	85	29.4	72	E	5	2.2	.....	2c	5k	NE	.....	0	0	.....	G. O. Gellich.
Paramaribo, D. Guiana, S. A.	.....	.....	29.96	761.0	84	28.9	75	E	.....	.....	1	4c	5k	E	.....	0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	67.0	19.4	87	Calm	.....	.....	0	.....	10s;ks	.....	.....	0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Makawao, Maui, H. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.: Clifton, about 2,892 ft., or 881.5 m.: Concho, 1, 750 ft., or 533.4 m.; Denver, 5,152 ft., or 1.573,4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.: Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1.670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.: Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.10	764.5	60	15.6	60	15.6	88	SW	12	5.4			10		S&W	0	0			Overcast	
Navy Yard, Pensacola, Fla.	30.20	767.1			66	18.9	89	N	2	0.9			9			2.30	58.4			D. clouds	
NavyYard, Portsmouth, N.H	30.03	762.7	68	20.0	42	5.6	91	N	4	1.8			10			0.05	1.3			Cloudy	
Naval Hospital, Yokohama, Japan	29.82	757.4	59	15.0	51	10.6	86	NNW			3		0			0	0			Clear	
Adams. Montevideo, Uruguay	30.03	762.7	69	20.6	69	20.6	85	Calm			0		7		SW	0	0	None		D. clouds	
Alert. Oki Islands	30.07†	763.8†	57	13.9	57	13.9	69	SW			3		5		WSW			Smooth		Squally	
Alliance, Constantinople, Turkey.	30.01	762.2	66	18.9	68	20.0	60	S			1		5		S&W					Pleasant	
Ashuelot. Tientsin, China	30.36	771.1	52	11.1	42	5.6	66	WNW			2		0					Smooth		Blue sky	
Canonicus, New Orleans, La	29.96	761.0	51	10.6	68	20.0	90	ESE			2		10							Cloudy	
Colorado, New York, N. Y.	30.03	762.7	66	18.9	57	13.9	81	SW	5	2.2			9		WSW					Overcast	
Despatch, Constantinople, Turkey.	30.05	763.3	79	26.1	67	19.4	79	Var.			0–1		1		Calm					Clear	
Franklin, Norfolk, Va.	30.16	766.1	51	10.6	52	11.1	83	WSW	7	3.1					WSW	0	0			Clear	
Gettysburg, Messina, Italy	29.82‡	757.4‡			69	20.6	100	SSW			2		3		Calm	0	0			D. clouds	
Kearsarge, N. 12° 20′ E. 50° 00′	29.92	760.0			84	28.9	71	N			2		3			0	0	Smooth	E	D. clouds	
Lackawana, Port Townsend, W. T.	29.80	756.9			54	12.2	80	SE			0–1		10		SE			Smooth		Raining	
Marion, Smyrna, Turkey	29.90	759.4	68	20.0	66	18.9	89	W			2		1		C m	0	0	Smooth		D. clouds	
Michigan, Sarnia, Ontario	29.34	745.2	64	17.8	55	12.8	80	SSW			2		8		W					Cloudy	
Monocacy, Yokohama, Japan	29.81	757.2	54	12.2	52	11.1	86	NW			2		1			0	0	Smooth		D. clouds	
Monongahela, N. 36° 07′, W. 6° 25′	30.28	769.1	63	17.2	63	17.2	72	NE			2		cs					Smooth		D clouds	
New Hampshire, Port Royal, S. C.	30.28	769.1			67	19.4	95	NE	5	2.2			9		NW	0	0			D. clouds	
Omaha, Valparaiso, Chili	29.98	761.5	64	17.8	59.5	15.3	91	Calm	0	0			10		Calm	0	0	Smooth		Foggy	
Onward, Callao, Peru	30.03†	762.7†	70	21.1	67.5	19.7	87	SSE			2		10					Long	W	D. clouds	
Ossipee, New York, N. Y.	29.97	761.2	64	17.8	55	12.8	87	WSW			3		8		WNW					D. clouds	
Palos, Shanghai, China	30.47	773.9	57	13.9	48	8.9	56	WNW			2		2		Calm					Clear	
Pensacola, Mare Island, Cal.	30.19	766.8			62	16.7	88	SW			1		9			0	0			Cloudy	
Plymouth, Norfolk, Va.	30.34†	770.6†	65	18.3	51	10.6	72	SW			1		2		SW					Clear.	
Ranger, Shanghai, China	30.50	774.7			50	10.0	79	NW			1		1		NW					Clear	
Rio Bravo, Brownsville, Texas	29.74	755.4			78	25.6	91	S			1		8		SW					D. clouds	
Santee, Annapolis, Md.	30.07	763.8	59	15.0	53	11.7	73	W			1		9		SE	0	0			Cloudy	
St. Louis, League Island, Pa	29.90	759.4	54	12.2	55	12.8	87	SW	7	3.1			8		SW	0	0			Cloudy	
Swatara, N. 38° 22′, W. 74° 19′	30.15	765.8			63	17.2	78	SSW			3		8					Moderate.	S&W	D. clouds	
Tennessee, Yokohama, Japan	29.79	756.7	64	17.8	54	12.2	74	NNW	12	5.4			0			0	0	Smooth		Blue sky	
Trenton, Villefranche, France	29.90†	759.4†	64	17.8	63	17.2	72	SW	3	1.3			3		S&E	0.5	13.			D. clouds	
Vandalia, Villefranche, France.	29.82	757.4	64	17.8	64	17.8	68	S			1		3		SSE					D. clouds	
Wabash, Boston, Mass.	29.95	760.7	58	14.4	51	10.6	86	NNE	5	2.2			10		Calm	0	0			D. clouds	
Wyoming, Washington, D. C.					54	12.2		Calm			0		6							Misty	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				SEA-SWELL.		WEATHER.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
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S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 23° 48′, E. 117° 48′			30.44*	773.2*	68	20.0	95	ENE			6		5		ENE	dough	ENE	D. clouds	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 35° 40′, W. 128° 30′			30.41†	772.4†				NW			4		Heavy		NW	Long	W	Cloudy	Capt. John Metcalf.
S. S. Gaelic, N. 45° 00′, W. 155° 37′			30.47*	773.9*	51	10.6	??	NNW			4		ks		NW	Heavy	NW	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 27° 11′, E. 124° 20′			30.13	765.3	64	17.8	78	N			4–6		3		NW	Moderate.	NW	D. clouds	Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 47° 16′, W. 37° 7′	N74E	11.0	29.68	753.9	58.0	14.4	78	WSW			8		4k		W	Heavy		Overcast	Capt. K. Undütsch.
S. S. Nürnberg, N. 39° 58′, W. 66° 25′			30.05	763.3	72.0	22.2	74	SW			5		0			Light	WSW	Fine	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. N. 45° 53′, W. 54° 45′			29.93*	760.2*	46	7.8	??	SSE			6		3		SSE	Moderate.	NW	Squally	Captain Sargent.
S. S. Ohio. Philadelphia, Pa.			30.00	762.0	70	21.1	90	NE			1				WSW			Clear	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.28†	743.7†	51	10.6	93	S			2		8		S			Foggy	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 41° 29′, W. 64° 45′			30.16*	766.1*	59	15.0		W	12	5.4			6		WNW	Moderate	WSW	Hazy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

* Aneroid regulated to standard at Antwerp.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Off Great Egg Harbor, N. J.			30.01	762.2	61	16.1	82	WSW	10	4.5			10ks		W	Short		Cloudy	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 26, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours	.....	.....	30.14	765.6	73.4	23.0	48	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair	Michel.
Algiers	.....	.....	30.03	762.8	71.6	22.0	69	NW	.....	.....	1	.....	4	.....	.....	0.335	8.5	Cloudy	Peter.
La Calle	.....	.....	30.04	763.0	61.0	16.1	94	W	.....	.....	2	.....	9	.....	.....	0.157	4.0	Covered	Fleury.
Tunis	.....	.....	29.93	760.3	70.3	21.3	55	NW	.....	.....	3	.....	8	.....	.....	0	0	Very cloudy	Jacques.
Sfax	.....	.....	29.96	761.0	69.8	21.0	.....	SSE	.....	.....	3	.....	9	.....	.....	0	0	Covered	Husson.
Saida	.....	.....	30.16	766.0	65.1	18.4	55	ENE	.....	.....	1	.....	2	.....	.....	0	0	Fair	Millot.
Tebessa	.....	.....	30.08	764.0	.....	.....	.....	WSW	.....	.....	1	.....	9	.....	.....	0	0	Covered	Bourgeois.
Geriville	.....	.....	30.13	765.4	59.4	15.2	58	NW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Lemaillot.
Laghouat	.....	.....	30.15	765.8	68.0	20.0	40	E	.....	.....	4	.....	2	.....	.....	0	0	Fair	François.
Biskra	.....	.....	30.12	765.0	77.2	25.1	56	NW	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.20	741.6	29.73	755.2	63.0	17.2	61	Calm	.....	.....	0	.....	2	.....	.....	0.244	6.2	.....	Prof. Ivan Stozir
Cracow, I. R. Observatory	28.97	735.9	29.72	755.0	59.4	15.2	60	NE	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. Wierzbiski.
Eperies	28.93	734.8	29.80	757.0	53.6	12.0	66	S	.....	.....	1	.....	9c;s	.....	Calm	0	0	.....	Julius Mikolik.
Gratz	28.50	724.0	29.74	755.3	57.7	14.3	65	S	.....	.....	2	.....	7	.....	.....	0.232	5.9	.....	Andreas Rospini.
Hermannstadt	28.39	721.2	29.79	756.7	57.2	14.0	44	SE	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. Reissenberger.
Kremsmünster	28.40	721.4	29.73	755.2	52.5	11.4	86	Calm	.....	.....	0	.....	10	.....	.....	0.047	1.2	.....	Prof. C. Wagner.
Lemberg	28.81	731.8	29.80	756.9	48.7	9.3	80	SE	.....	.....	1	.....	5	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.71	754.5	29.82	757.3	57.7	14.3	85	WNW	.....	.....	1	.....	10s	.....	.....	0.009	0.23	.....	I.R.Hydrographic Office.
Szathmar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Johann Tamas, S. J.
Szegedin	29.51	749.5	29.78	756.5	59.0	15.0	72	Calm	.....	.....	0	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.75	755.6	29.85	758.2	56.5	13.6	98	Calm	.....	.....	0	.....	10	.....	.....	0.094	2.4	Light rain	P. Busin.
Vienna	29.06	738.1	29.74	755.5	58.6	14.8	58	Calm	.....	.....	0	.....	10	.....	.....	0.008	0.2	.....	I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.32	719.4	29.83	757.7	49.8	9.0	81	WSW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.60	751.7	29.79	756.7	54.0	12.2	74	W	.....	.....	4	.....	10	.....	NW	0	0	.....	Royal Observatory.
Furnes	29.79	756.7	29.82	757.3	53.8	12.1	83	WNW	.....	.....	4	.....	10	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.61	752.0	29.74	755.3	55.2	12.9	88	WNW	.....	.....	2	.....	7	.....	.....	0.307	7.8	.....	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.60	751.8	29.70	754.4	47.0	8.3		S	15	6.7			5			0.170	4.32	Blue sky	W. Boswell.
Ardrossan	29.66	753.4	29.68	753.9	51	10.6		S			5		7					D. clouds	William McNeil.
Armagh, Observatory			29.70	754.4	50.0	10.0		S	12	5.4			4					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.79	756.7	52.6	11.4		W	9	4.0			1					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			29.73	755.1	55.5	13.1		S			2		8					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.38	746.2	29.78	756.4	52.6	11.4		NW			1		5			0.10	2.5	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	78	25.6		NE			2		7					Overcast	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.86	758.4	54.0	12.2		SW			1		7					D. clouds	H. Todd. [H. C.
Cardington			29.85	758.2	53.0	11.7		NW			1		8					Overcast	John McLaren.
Chatham, School M. E.	29.73	755.1	29.86	758.4	52.2	11.2		W			1		3					Blue sky	Lt. Col. C. M. Martin, R. E.
Dartmoor	27.95	709.9	29.40	746.7	50.4	10.2		W			3		4					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.68	753.9	29.71	754.6	49	9.4		SSW			3		2					D. clouds	J. Mac Gowan.
Dover	29.83	757.7	29.86	758.4	52	11.1		NNW			3		5					½ clouded	J. Costello.
Eccles, (near Manchester)			29.79	756.7	51.8	11.0		S	1.6	0.7			7					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.70	754.4	29.92	760.0	56.0	13.3		WNW			2		2					D. clouds	The Staff.
Fort Napier, (Natal)	27.75	704.8	29.96	761.0	71.3	21.8		NE			2		10					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.98	761.5	88.0	31.1		Calm			0		3					D. clouds	
Galway, Queen's College					55	12.8		W			4		3					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.07	763.8	30.11	764.8	72.5	22.5		SW			5		1					Blue sky	Corpl. C. Aitken, A. H. C.
Glasgow, Observatory	29.48	748.8	29.69	754.1	48.9	9.4		WSW			2		7					Gloomy	D. G. Maclean.
Great Yarmouth	29.81	757.2	29.81	757.2	52	11.1		NNE			2		0					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.69	754.1	29.86	758.4	51.7	10.9		WSW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.70	754.4	29.92	760.0	58	14.4		NW			2		6					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			29.92	760.0	59	15.0		W			2		2			0	0	D. clouds	M. P. Moyle.
Holyhead	29.74	755.4	29.79	756.7	53	11.7		SW			3		3					D. clouds	John Tilston.
Jersey	29.66	753.4	29.95	760.7	59.0	15.0		NW			4		8			Blank	Blank	Squally	J. Fisher.
Kew, Observatory			29.86	758.4	53.4	11.9		W	6	2.7								Threatening	The Staff.
Kingstown	29.75	755.6	29.78	756.4	54	12.2		SW			3		6					D. clouds	George Mitchell.
Leicester, Museum			29.84	757.9	55.3	12.9		NW			1		5					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.80	756.9	29.87	758.7	70.0	21.1		NW			1		4					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.51	749.5	29.60	751.8	47	8.3		Calm			0		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.98	761.5	84.5	29.2		SE			2		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.63	752.6	29.82	757.4	54.2	12.3		SW			1		5c		SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.30	744.2	29.82	757.4	53.8	12.1		W			1–2		6					Hazy	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.85	758.2	56	13.3		WSW			1		6					D. clouds	F. Lucas
Plymouth	29.81	757.2	29.89	759.2	57.5	14.2		NW			3		2					D. clouds	John Merrifield.
Roche's Point	29.75	755.6	29.80	756.9	56	13.3		WSW			3		5					½ clouded	W. Kennedy.
Saint Ann's Head	29.67	753.6	29.83	757.7	55	12.8		W			1		2						John C. Walker.
Sandwick Manse, (Orkneys)			29.57	751.1	46.5	8.1		SSW	11	4.9			0					Blue sky	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.89	759.2	65.2	18.4		SW			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.56	750.8	29.79	756.7	53.3	11.8		SW			1		4			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	29.71	754.6	29.74	755.4	54.6	12.6	71	SE			2		0			0.390	9.91	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					50.0	10.0		SW			1		8					Hazy	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.45	748.0	48	8.9		S			7		10					Threatening	John Smith.
Stratfield Turgiss	29.63	752.6	29.85	758.2	55.9	13.3		Calm			0		0					Blue sky	Rev. C. H. Griffith, F. M. S.
Thurso			29.55	750.6	50	10.0		S			2		4					D. clouds	John Trotter.
Truro, Royal Institution			29.93	760.2	60	15.6		W			4		6					D. clouds	W. Newcombe.
Valencia, Observatory			29.72	754.9	56.1	13.4		SW	44	19.7			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		NW			3		0			0.20	5.1		Henry Mercer.
Cape Good Hope, Obs'y	29.90	759.4	29.94	760.5	75.1	23.9	58	NW	20	8.9		9	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.62	752.3	51.5	10.8	82	Calm			0		0			0	0		Francis Abbott, F. R. A. S
Leith, Restalrig Park			29.73	755.1	49.0	9.4		SW			2	10ck				0.02	0.5	Fine; cloudy	Andrew Gibb.
Mauritius, Observatory	29.88	758.9	30.07	763.8	77.0	25.0	67	E	11.5	5.1		8	0			0.01	0.3	Cloudy	C. Meldrum.
Melbourne, Observatory	29.72	754.9	29.81	757.2	72.8	22.7	43	SW	17	7.6			9			0	0	Lightning	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.40	746.7	52	11.1		SSW			7		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.58	751.3	44	6.7		NNW			4	3	4	NW					Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 47° 40′, W. 36° 20′			29.58	751.3	52	11.1		WSW			7		6			8	WSW	Showery	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine,																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			29.82	757.4	56	13.3		SW			4		9					D. clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.21	665.7			68.0	20.0	92	SW			2		9psd		NE	0.7	18.	Storm	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.57	751.0	29.61	752.2	47.8	8.8	86	Calm			0		9						
Fanöe	29.66	753.4	29.68	753.9	46.9	8.3	65	N			4		2						
Godthaab, (Greenland)	29.29	743.9	29.33	745.0	32.2	0.1	76	ENE			4		0						
Stykkisholm, (Iceland)	29.95	737.9	29.10	739.0	36.5	2.5	93	E			4		5						
Thorshavn, (Faröe)	29.40	746.7	29.43	747.6	42.3	5.7	86	SE			6		10					Raining	
Vestervig	29.52	749.9	29.69	754.2	43.9	6.6	83	NW			4		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.44	747.7	29.99	761.7	55.4	13	78	NW			4		5		NW	Blank	Blank	Cloudy	Collignon, Director.
Amiens, Normal School	29.74	755.4	29.85	758.2	57.6	14.2	76	WNW			2		2		W	0.315	8.0	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	29.84	758.0	29.92	760.0	63.5	17.5	61	N			1		0			0.20	5.	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.32	744.7	29.88	759.0	57.7	14.3	65	NW			1		8kn		W	0.193	4.9	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.82	757.3	29.98	761.4	58.5	14.7	57	W	6.0	2.7					NW	0	0		Albert Cheux.
Beauvais	29.61	752.1	29.80	759.4	54.5	12.5	82	WNW			1		8		WNW	0.256	6.50	Very cloudy	Normal School.
Besançon	29.04	737.7	29.93	760.2	55.4	13	81						8			0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.10	739.0	30.01	762.2	54 9	12.7	77	SW			2		10n		SW	0.55	14.	Covered	Normal School.
Bourges, Normal School	29.33	745.0	29.88	759.0	55.8	13.2	79	WSW			4		5		WNW	0.142	3.6	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.71	754.7	29.93	760.3	59.9	15.5	70	W			3		6k		W	0.080	0.75		The Staff.
Carcassonne, Normal School	29.57	751.1	29.98	761.5	62.6	17	76	W			1		2		W	0.28	7.	Slightly cl'dy	Vateau, Director.
Caen	29.83	757.7	29.91	759.6	57.6	14.2	87	E			2		8		E	0	0	Very cloudy	Normal School.
Chartres, Normal School	29.32	744.6	29.87	758.8	59.7	15.4	85	NW			3		10		SE	0.413	10.5	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.35	745.4	29.66	753.4	54.0	12.2	93	W			2		10n		W	0.209	5.3	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.60	726 5	29.95	760.7	57.2	14.0	53	W			2		8		W	0.020	0.5	Very cloudy	Alluard, Director.
Commercy, Normal School	29.00	736.7	29.89	759.1	50.5	10.3	90	W			2		10n		W	1.043	26.5	Covered	Dr. Goulet, Director.
Commune de Gréasque*	28.80	731.6	29.95	760.6	59.5	15.3	60	NW			4		2		NW	0.165	4.2	½ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.80	757.0	30.02	762 6	58.3	14.6	74	NW			1		5		W	0.12	3.	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.65	753.2	29.96	761.0	56.5	13.6	73	W			2		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.97	735.9	29.89	759.3	50.9	10.5	93	S			1		10		NE	0.756	19.20	Raining	Pin, Director.
Lorient, Naval Observatory	29.91	759.6	30.00	762.1	59.0	15.0	68	W			2		5		N	0.016	0.4	½ covered	T. Carré, Director.
Mâcon, Normal School	29.27	743.4	29.91	759.8	53.6	12	93	Calm			0		5		SW	0.55	14.	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	28.65	727.8	29.70	754.4	55.4	13	81	SE			2		2		NW	0.31	8.	Slightly cov'd	Normal School.
Nismes, Normal School	29.72	754.9	29.92	759.9	62.6	17	74	W			4		0			0.049	1.25	Clear	Boyer, Director.
Orleans, Normal School	29.52	749.9	29.90	759.4	58.3	14.6	65	SW			3		5		WNW	0.016	0.4	Cloudy	Bernard, Director.
Paris, Observatory	29.65	753.2	29.89	759.3	53.2	11.8	74	WNW			2		8ck			0.194	4.93	Very cloudy	National Observatory.
Privas	28.89	733.8	29.95	760.6	59.0	15	69	NW			2		2			0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.00	761.9	30.03	762.7	60.8	16.0	70	W			3		2		W	0	0	¼ covered	Lt. Decante, Director.
Rouen, Normal School	29.82	757.4	29.91	759.6	58.1	14.5	74	NW			2		5		NW	0.492	12.5	Cloudy	F. Lucard, Director.
Tarbes, Normal School	29.04	737.6	30.11	764.7	62.6	17	90	E			2		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.26	743.2	29.97	761.3	55.4	13	88	NNW			3		8		NW	0	0	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.70	756.7	29.82	757.4	82.4	28										0.47	12.		L'Abbé Marchési.
Marseilles, Observatory			29.89	759.1	61.9	16.6	50	WNW			3		1			0.031	0.80		The Staff.
Mont-Louis	24.85	631.2	30.21	767.2	48.6	9.2	36	NW	9.3	4.17			10			0.067	1.7		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.61	752.0	29.88	759.0	53.1	11.7	77	NW			2-3		7		WNW	0.087	2.2		Marié Davy, Director.
Perpignan			30.03	762.7	64.0	17.8	47	N	22.4	10.00			1		NW	0.146	3.7		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.26	540.0			28.4	— 2.0		NW			2		2					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.53	572.2			37.4	3.0		NW			8		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.72	755 0	29.89	759.2	54.7	12.6	78	NW			1		8		WNW	0.012	0.3		E. Renou.
Toulouse, Observatory	29.37	746.0	30.10	764.5	57.4	14.1	82	NNW			3		9			0.118	3.0		The Staff.
Tours	29.76	756 0	29.96	761.0	57.9	14.4	71	N			2		5		WNW	0.043	1.1		C. Marquet.
Versailles, (near Paris)			29.90	759.5	55.8	13.2	73	NW			3		9			0.064	1.62	Very cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.34	770.6	30.36	771.2	44.8	7.1	68	WSW	5.4	2.4			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,363 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.37	746.0	29.54	750.3	56.5	13.6	53	S			2		8			0.024	0.61		Prof. Arndt.
Breslau	29.16	740.6	29.68	753.9	56.1	13.4	66	S			3		8			0.021	0.54		Royal University Obs'y.
Carlsruhe	29.35	745.6	29.78	756.3	54.0	12.2	86	SW			4		9			0	0		Albert Senz.
Cassel	29.11?	739.3?	30.10?	764.5?	47.8	8.8	91	WNW			6		8	W		Inap.	Inap.		Dr. H. Möhl.
Crefeld	29.58	751.2	29.74	755.3	52.3	11.3	79	NW			2		8k			0.51	13.		Director Lose.
Emden	29.77	756.1	29.80	757.0	50.0	10.0	92	NE			3		5			0.071	1.8		Prof. Prestel.
Frankfort on the Main	29.44	747.8	29.80	757.0	53.6	12.0	60	WNW			1		8			0.075	1.9		Physical Society.
Friedrichshafen	28.43	722.0	29.86	758.4	52.7	11.5	85	W					10	WSW		0.673	17.1	Raining	M. Wilhelm.
Hamburg	29.56	750.8	29.63	752.6	48.6	9.2	87	NNE			2		7c;k	SW		0.220	5.6	Fine	Captain F. Hegemann.
Kiel	29.63	752.5	29.64	752.9	49.3	9.6	87	W			2		6			0.016	0.41		Prof. G. Karsten.
Königsberg, (Prussia)	29.62	752.3	29.70	754.4	43.2	6.2	91	SE										Cloudy	Prof. E. Luther.
Köslin			29.57	751.1	48.2	9.0		SE			2		4			0	0		H. Müller.
Leipsic, Observatory	29.19	741.5	29.61	752.1	54.5	12.5	59	SW			5		9	W		0.012	0.3		Prof. Bruhns.
Memel, Naval School	29.69	754.2	29.74	755.4	46.6	8.1	83	SE			1		10cs						Reinbrechtvon Skalweit.
Neufahrwasser	29.64	752.8	29.65	753.2	47.8	8.8	84	SSE			2		10			0	0		A. Lothes.
Posen	29.39	746.5	29.68	753.9	54.5	12.5	71	S			5		10			0	0	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.29	743.9	29.84	757.8	54.9	12.7	79	W			1		10	W		0.146	3.71	Raining	Dr. Schur.
Stuttgart	28.83	732.2	29.76	756.0	51.8	11.0	85	W			2		10	W		0.043	1.1	Light rain	Prof. Schoder.
Treves, (Trier)	29.17	741.0	29.69	754.1	55.9	13.3	60	WSW			6		7			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.25	717.5	29.75	755.7	51.4	10.8	76	W			3		9kn	W	W	0.122	3.1		Dr. Von Bebber.
Wustrow, Naval School	29.60	751.8	29.64	752.8	45.3	7.4	89	E			2		8						E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.52	749.8	29.91	759.7	63.3	17.4		E										Cloudy	D. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.95	760.6	30.00	761.9	84.9	29.4	45	WSW	16.0?	7.2?			2			0	0	D. clouds	
Deesa	29.55	750.6	30.03	762.7	85.2	29.6	33	ESE					1	SE		0	0	D. clouds	
Bombay	29.92	759.8	29.95	760.8	80.9	27.2	83	NW	8.0	3.6			4	WSW	SW	0.08	2.0	Misty	
Poona	27.95	709.9	29.96	761.1	76.7	24.8	70	SE					9		E	0	0	D. clouds	
Lahore	29.28	743.6	30.03	762.7	77.5	25.3	30	Calm	1.0	0.4			2			0	0	Misty	
Belgaum	27.42	696.4	30.00	761.9	70.2	21.2	89	ESE	14.0	6.3			8		E	1.00	25.4	D. clouds	
Bangalore																			
Roorkee	29.09	739.0	30.00	762.1	75.8	24.3	43	Calm	1.7	0.8						0	0		
Agra	29.44	747.7	30.01	762.2	77.8	25.4	36	N								0	0		
Trichinopoly																			
Nagpur	28.97	735.8	30.03	762.8	74.6	23.7	49	E	2.7	1.2			4			0	0	D. clouds	
Madras																			
Lucknow	29.63	752.7	30.01	762.3	75.3	24.1	56	Calm	0.3	0.1						0	0	Blue sky	
Allahabad	29.69	754.0	30.00	762.1	71.7	22.1	58	Calm	0.9	0.4			0			0	0	Blue sky	
Patna	29.80	756.8	29.98	761.5	79.9	26.6	39	E	1.0	0.4			8	E	E	0	0	D. clouds	
Hazaribagh	27.97	710.4	30.02	762.5	71.3	21.8	41	WNW	3.9	1.7			2			0	0		
Cuttack	29.90	759.6	29.99	761.7	79.0	26.1	64	Calm	0.7	0.3			3			0	0	D. clouds	
Calcutta (Alipore)	29.95	760.7	29.97	761.2	79.1	26.2	70	N	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.55	750.6	29.94	760.6	79.8	26.6	66	NE	4.5	2.0			6	W		0	0	D. clouds	
Chittagong	29.90	759.4	29.99	761.8	77.1	25.1	93	W	0.2	0.1			0			0	0	Gloomy	
Sibsagar	29.63	752.5	29.96	761.1	77.1	25.1	82	ENE	2.7	1.2			10			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.66	728.0	30.05	763.3	75.0	23.9	57	NE	1.5	0.7			3	E		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Valdobbia	22.02	559.4	29.90	759.5	33.8	1.0	82	NW			6		7	NW		0	0		Ab. Dom. Mongini.
Stelvio	22.02	559.2	29.95	760.7	33.1	0.6		NNE			1		7	SSE		0.157	4.0		Signora Ernesta Manfredi.
Udine	29.40	746.8	29.82	757.4	55.4	13.0	80	Calm	0	0			9			0.354	9.0		Prof. Giovanni Clodig.
Padua	29 71	754.5	29.82	757.3	55.6	13.1	82	SW	6.3	2.8			10	WNW		0.087	2.2		Prof. Dott. Lorenzoni.
Vicenza	29.62	752.3	29.82	757.3	56.1	13.4	80	N	0	0			6	W		0.260	6.6		Conte Alm. Da Schio.
Verona	29.58	751.3	29.80	757.0	61.5	16.4	75	W	9.4	4.2			10			0	0		Dott. B. Bertoncelli.
Bergamo	28.53	724.7	29.86	758.4	58.1	13.4	75	NW			1		8			0.087	2.2		Prof. Trionfini Carlo.
Domodossola	28.76	730.6	29.81	757.1	56.3	13.5	71	S			4		1			0	0		Prof. Giuseppe Calza
Milan	29.73	755.2	29.86	758.4	55.0	12.8		W			1		8			0	0		Ab. Gio. Capelli.
Pavia	29.50	749.3	29.85	758.2	54.5	12.5	75	W			1		9	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	28.95	735.2	29.87	758.7	51.8	11.0	79	SSE	0.7	0.3			8	NE		0	0		Prof. P. F. Denza.
Mondovi	27.93	709.3	29.86	758.4	52.2	11.2	70	NW			4		1			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.61	752.1	29.84	757.8	59.7	15.4	59	E			4		2			0.020	0.5		Prof. L. Vassallo.
Genoa	29.65	753.1	29.82	757.4	64.2	17.9	62	SE	7.4	3.3			4	SE		0.028	0.7		Prof. G. M. Garibaldi
Piacenza	29.59	751.5	29.84	758.0	55.4	13.0	70	W	12.5	5.6			9	NW		0.012	0.3		Dott. G Manzi.
Parma	29.56	750.7	29.87	758.6	55.4	13.0	66	WNW			2		7			0	0		Prof. P. Pigorini.
Florence	29.62	752.4	29.88	759.0	58.5	14.7	80	NE			2		10	E		0.067	1.7		Cav. F Meucci.
Leghorn	29.74	755.3	29.82	757.5	58.6	14.8	87	E	2.5	1.1			10			0.311	7.9		Prof. P. Monte.
Siena	28.64	727.5	29.90	759.4	55.8	13.2	76	E	0	0			8	W		0.039	1.0		Prof. L. Toscani.
Urbino	28.30	718.9	29.88	758.9	55.0	12.8	72	WSW			2		10			0.138	3.5		Prof. P. Serpieri.
Pesaro	29.81	757.1	29.86	758.4	53.2	12.9	88	NE	16.1	7.2			10			0	0		Prof. Luigi Guidi.
Ancona	29.76	755.8	29.86	758.5	57.6	14.2	86	NW			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.75	755.7	29.87	758.6	59.7	15.4	76	ENE			2		7	SE		0	0		Avv. P. Ponticelli.
Rome	29.69	754.2	29.87	758.7	63.0	17.2	68	W	0	0			10			0.122	3.1		Prof. P. A Secchi.
Naples, O. U	29.67	753.6	29.87	758.7	67.6	19.8	47	WNW			2		5	SW		0.079	2.0		Prof. L. Palmieri.
Lecce					67.1	19.5	69	SSW	1.3	0.6			7	SW		0	0		Prof. C. De Giorgi.
Cosenza	28.98	736.1	29.87	758.8	66.2	19.0	81	SW	1.3	0.6			2			0	0		Prof. F. D. Conti.
Cagliari	29.61	752.1	29.80	756.9	69.3	20.7		Calm			0		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.78	756.3	29.82	757.5	69.1	20.6	47	NE			4		5			0	0		Prof. F. Cafiero.
Palermo	29.59	751.6	29.85	758 1	64.4	18.0	59	NE	4.2	1.9			6			0.724	18.4		Prof. G. Cacciatore.
Caltanissetta	27.88	708.2	29.82	757.4	61.7	16.5	56	WNW			4		5	SE		0	0		Prof. A. Pagani.
Syracuse	29.74	755.4	29.82	757.3	64.8	18.2	69	NW			2		5	WNW		0.169	4.3		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.34	745.2	29.89	759.3	64.2	17.9	49	WSW	5.6	2.5			4			0.122	3.1		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei. (Yeddo)																			The Observatory.
Tokei (Yeddo) University	29.84	757.9	29.94	760.5	50.1	10.1	76	NNW	3	1.3						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.13	587.5	30.17	766.4	55.9	13.3	77	Calm	0	0		0	8k		NE	0	0	Cloudy.	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.81	757.1	29.81	757.1	55.4	13.0		WNW			4					0.374	9.5		
Groningen	29.71	754.5	29.76	755.9	50.2	10.1		N			2					0.055	1.4		
Helder	29.77	756.1	29.77	756.1	51.6	10.9		N			4					0.028	0.7		
Hellevoetsluis			29.76	755.8	55.8	13.2	84	N			3								
Utrecht	29.71	754.7	29.76	755.9	52.7	11.5	78	N			2		5			0.079	2.0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.57	751.1	29.63	752.5	41.7	5.4	66	S	15.4	6.9			4			0.071	1.8		
Brône	29.39	746.4	29.43	747.4	35.6	2.0	85	SW	27	12			10			0.394	10.0		
Christiania	29.50	749.3	29.65	753.1	41.0	5.0	52	NNW	2to4	1to2			0			0	0		
Tromsö	29.19	741.5	29.24	742.6	32.4	0.2	71	SW	27	12			9			0.020	0.5		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	30.26?	768.7?	30.45?	773.5?	67.6	19.8	92	SW	4.9	2.2			9			0.079	2.0		Dr. J. A. Sampaio
Campo Major	29.10	739.0	30.11	764.7	68.9	20.5	70	Calm	0	0			9			0.091	2.3		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.13	765.3	30.20	767.1	73.0	22.8	57	SE	3.8	1.7			2			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.76	755.9	30.11	764.9	65.8	18.8	96	SW	15.0	6.7			10			0.358	9.1	Light rain	The Staff.
Ponta Delgada, (Azores)	30.07	763.6	30.13	765.4	70.5	21.4	84	WSW	7.4	3.3			3			0.205	5.2		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Observer.
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.29	744.0	29.71	754.7	50.2	10.1	73	SSE	9	4			2						Astronomical Obs.
Wilna	29.41	747.1	29.84	757.9	43.5	6.4	90	SSE	4	2			10						Astronomical Obs.
Dorpat	29.58	751.3	29.82	757.5	47.1	8.4	69	SSW	4	2			6						Prof. Dr. Weihrauch
St. Petersburg	29.77	756.1	29.78	756.5	46.4	8.0	77	SW	13	6			8						Central Physical Obs.
Kuopio	29.27	743.5	29.60	751.8	35.6	2.0	93	WSW	13	6			8					Raining	Ch. Forsten.
Kieff	29.32	744.6	29.97	761.1	41.4	5.2	87	SE	7	3			10						Physical Cabinet.
Nikolaiev	29.92	759.9	29.99	761.7	48.6	9.2	92	S	0	0			10						Kurdakof.
Kertch	29.96	761.0	29.98	761.5	63.3	17.4	76	SSE	2	1			4						Lagorio.
Moscow	29.52	749.8	30.08	764.0	45.7	7.6	80	SSW	7	3			9						Meteorological Obs.
Lugan	29.88	759.0	30.09	764.2	53.6	12.0	67	ESE	22	10			10						Meteorological Obs.
Archangel	29.56	750.7	29.58	751.2	37.9	3.3	78	WSW	22	10			10						Ogorodnikof.
Tiflis	28.73	729.8	30.15	765.8	57.0	13.9	72	SE	9	4			4						Physical Observatory.
Astrakhan	30.39	772.0	30.31	769.9	49.1	9.5	61	ESE	11	5			1						Sebastianof.
Kasan	30.04	763.1	30.32	770.1	46.4	8.0	40	SSW	2	1			0						Physical Cabinet.
Orenburg	29.75	755.6	30.14	765.5	34.0	1.1		E	13	6			0						Tschernischei.
Ekaterinburg	29.30	744.3	30.27	768.8	46.9	8.3	82	W	18	8			3						Meteorological Obs.
Nukuss	30.06	763.5	30.30	769.5	50.0	10.0	42	NE	7	3			3						
Kasaly																			Bobrof.
Tashkend	28.65	727.8	30.39	771.9	52.5	11.4	82	NW	4	2			3						Michelson.
Barnaul	29.73	755.1	30.26	768.7	39.2	4.0	67	SW	0	0			10						Meteorological Obs.
Yeniseisk	29.68	753.8	29.82	757.5	31.5	— 0.3	96	S	2	1			10					Snowing	Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.15	765.9	30.30	769.5	49.6	9.8	37	Calm	0	0			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					25.3	— 3.7	82	W	2	1			2						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.84	707.2	30.02	762.5	68.5	20.3	67	S	2.2	1.00		1	6	N		0.008	0.2	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.4	29.98	761.4	78.3	25.7	91	Calm	0	0		0	0			0.039	1.0	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.08	764.0	30.18	766.5	69.1	20.6	67	W	10.1	4.5		3	4	W	W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.93	760.3	83.8	28.8	83	SE	0	0		3c	2k			0.059	1.50		Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.50	749.2	29.54	750.2	26.2	— 3.2		SW			2		0			0	0		
Umea	29.56	750.7	29.61	752.0	29.8	— 1.2	96	Calm			0		0			0.047	1.2		
Hernosand	29.57	751.1	29.62	752.4	39.2	4.0	61	W			2		8			0.020	0.5	Snowing	
Stockholm	29.45	747.9	29.62	752.4	46.0	7.8	78	SE			2		10			0.004	0.1		
Wisby	29.60	751.8	29.66	753.3	47.5	8.6	84	SW			6		7			0.220	5.6		
Sub-Series.																			
Upsala	29.56	750.7	29.63	752.6	40.8	4.9	96	NNW	3.6	1.6			3		WSW	0.002	0.05		Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.51	724.1	29.93	760.1	57.2	14.0	59	S			2		9			0.346	8.8	Covered	The Observatory.
Zurich	28.25	717.5	29.90	759.4	50.7	10.4	86	W			4		9			0.098	2.5	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, —2.0 mm; Thermometer, +3.2 cent.; Relative Humidity, —15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.93	760.2	62.8	17.1	75	SW	2	1.0			3		SW	0	0		The Observatory.
Fao, (Persian Gulf)																			
Salonica			29.93	760.1	56.1	14.5		NW			1		5						B. Stefanidès.
Valona			29.90	759.5	71.2	21.8		NW			1		5			0	0	Cloudy	A. Bertrand.
Varna																			Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.99	761.7	75.9	24.4	67	WSW			1		8cs;ks		SW	1.04	26.4	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.			30.16	766.1	30	— 1.1		E	13	5.8		2c	2s	W	E	0.06	1.5	Fair	Hon. J. Ferguson.
Brockville, Ontario			29.99	761.7	28	— 2.2	88	W	10	4.5		10c	0	NW		0	0	Fair	W. R. Bigg.
*Chatham, N. B.			29.91	759.7	34	1.1	84	NW	10	4.5			8s		Calm	0.210	5.33	Light snow	G. A. Blair.
Charlottetown, P. E. Island.	29.95	760.7	30.15	765.8	23.2	— 4.9	96	SE			2	0	2s			0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario					27.2	— 2.7	84	W			1					0	0	Bright	James Smith, M. A.
Dalhousie, N. B.	29.88	758.9	29.93	760.2	44.3	6.8	100	SW					10			0.22	5.6	Rainy	H. A. Johnson.
Esquimault, B. C.			30.10	764.5	28	— 2.2	70	NW	20	8.9		8c	2s	N	N	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.02	762.5	30.09	764.3	26.4	— 3.1	82	NW	7	3.1		0	0			0.03	0.8	Clear	J. McWilliams.
Fredericton, N. B.			29.59	751.6	38	3.3	100	SW	11	4.9		0	2ks		S	0.120	3.05	Fair	Prof. Harrison.
*Fort Garry, Manitoba	29.18	741.2	29.99	761.7	38.5	3.6	84	NE			3		10n			0	0	Cloudy	James Stewart.
Goderich, Ontario	28.82	732.0	29.95	760.7	36	2.2	90	E			1		10n			0.15	3.8	Cloudy	H. J. Strang, M. A
Granton, Ontario	29.78	756.4	29.92	760.0	34	1.1	84	NW	13	5.8		0	2ks		N	0.232	5.89	Fair	James Grant.
*Halifax, N. S.	29.64	752.8	30.02	762.5	39.2	4.0	73	N			3	10cs	0	E		0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.77	756.1	29.79	756.7	31	— 0.6	89	Calm			0		10n			0.02	0.5	Snowing	Geo. Dickson, M. A
Heart's Content, N. F.	29.78	756.4	30.16	766.1	29	— 1.7	89	NE	7	3.1		8c	0	Calm		Inap.	Inap.	Fair	E. Weedon.
*Kingston, Ontario	29.97	761.2	30.18	766.6	25	— 3.9	87	NE	6	2.7		0	Haze			0.16	4.1	Clear	S. Woods, M. A
*Montreal, Quebec	29.40	746.7	30.13	765.3	27	— 2.8	88	NE	11	4.9		0	0			0.02	0.5	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.32	744.7	30.11	764.8	30.2	— 1.0	73	E			2	0	4s			0.12	3.0	Fair	Rev. R. Mosley
Peterboro, Ontario	29.26	743.2	29.98	761.5	38	3.3	91	NE	10	4.5			10n		NE	0.08	2.0	Threatening	J. F. Jeffers, B. A.
Port Dover, Ontario	29.78	756.4	29.83	757.7	32.7	0.4		W	4	1.8						0	0	Fine	H. Morgan.
Port Hastings, N. S.	29.29	744.0	29.94	760.5	40	4.4	91	E	8	3.6			10n		E	0.15	3.8	Light rain	Peter Grant
Port Stanley, Ontario	29.84	757.9	30.18	766.6	27	— 2.8	76	Calm	0	0		0	0			0.20	5.1	Clear	M. Payne.
*Quebec, Quebec	29.72	754.9	30.21	767.3	29	— 1.7	61	NE	10	4.5		0	0			0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.86	758.4	30.04	763.0	26	— 3.3	87	N	4	1.8		0	0			0	0		W. H. McIntyre.
St. John, N. B.	29.30	744.2	30.02	762.5	35	1.7	76	SE	4	1.8		8k	0			0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario			30.10	764.5	30	— 1.1	90	SE	3	1.3		2ck	0	W		0.04	1.0	Fair	K. Stewart.
Stayner, Ontario	28.66	728.0	29.99	761.7	34.0	1.1	91	E	12	5.4			10n			0.236	5.99	Cloudy	R. J. Cole.
Stratford, Ontario	29.78	756.4	29.82	757.4	35	1.7	90	N	4	1.8		8k	8n	N	N	0.30	7.6	Clearing	C. J. MacGregor, M. A.
*Sydney, C. B.	29.67	753.6	30.07	763.8	34	1.1	64	NE	12	5.4			10ks			0.13	3.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.87	758.7	29.97	761.2	32.5	0.3	79	N	10	4.5		0	0			0.35	8.9	Clear	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram.
Woodstock, Ontario																			J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland					32.0	0.0	100	SW					10n					Snowing	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.82	757.4	30.05	763.3	35	1.7	90	NW	7	3.1			10s		Calm	0.33	8.4	Cloudy	
Alpena, Michigan	29.34	745.2	30.00	762.0	42	5.6	83	E	14	6.3			10s		E	0.03	0.8	Cloudy	
Atlantic City, New Jersey	29.88	758.9	29.90	759.4	60	15.6	94	E	25	11.2			10s		E	0	0	Threatening	
Augusta, Georgia	29.72	754.9	29.90	759.4	63	17.2	97	E	2	0.9			10n		E	0.41	10.4	Light rain	
Baltimore, Maryland	29.83	757.7	29.88	758.9	56	13.3	80	NW	4	1.8			10s		W	0	0	Cloudy	
Barnegat, New Jersey	29.91	759.7	29.93	760.2	57	13.9	87	E	26	11.6			10s		E	0	0	Cloudy	
Bismarck, Dakota	27.86	707.6	29.53	750.0	36	2.2	90	NW	7	3.1			10s		W	Inap.	Inap	Cloudy	
Boise City, Idaho	27.21	691.1	29.86	758.4	41	5.0	73	N	8	3.6		0	5s		W	0.08	2.0	Fair	
Boston, Massachusetts	29.93	760.2	30.09	764.3	36	2.2	70	N	11	4.9			9ks;s		NE; SW	0.10	2.5	Cloudy	
Brackettville, Texas	28.75	730.2	29.78	756.4	50	10.0	85	Calm	0	0		0	0			0.02	0.5	Clear	
Breckenridge, Minnesota	28.64	727.4	29.62	752.3	45	7.2	100	S	12	5.4			Fog		Calm	0	0	Foggy	
Brownsville, Texas	29.87	758 7	29.94	760.5	66	18.9	91	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.23	742.4	29.95	760.7	39.0	3.9	91	NE	12	5.4			10s		NE	0.36	9.1	Cloudy	
Burlington, Vermont	29.88	758.9	30.15	765.8	29	— 1.7	89	N	1	0.4		0	0			Inap	Inap.	Clear	
Cairo, Illinois	29.41	747.0	29.79	756 7	60	15.6	88	S	3	1.3			Fog		Calm	0.06	1.5	Foggy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26 77	680.0	30.26	768.6	41	5.0	73	Calm				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.82	757.4	29.83	757.7	66	18.9	94	NW	17	7.6			10n		W	0.45	11.4	Light rain	
Cape Henry, Virginia	29.83	757.7	29.85	758.2	62	16.7	94	Calm	0	0			10n		Calm	0.08	2.0	Light rain	
Cape Lookout, N. Carolina	29.86	758.4	29.88	758.9	72	22.2	95	SW	10	4.5			10n		SW	0.02	0.5	Light rain	
Cape May, New Jersey	29.84	757.9	29.91	759.7	60	15.6	88	SE	5	2.2			10ks		SW	0	0	Cloudy	
Charleston, South Carolina	29.83	757.7	29.90	759.4	70	21.1	95	N	4	1.8			10n		Calm	0.02	0.5	Light rain	
Cheyenne, Wyoming	23.78	604.0	29.72	754.9	44	6.7	54	W	12	5.4		0	0			0	0	Clear	
Chicago, Illinois	29.09	738.9	29.77	756.1	53	11.7	100	NW	7	3.1			10n		NW	0.07	1.8	Light rain	
Cincinnati, Ohio	29.13	739.9	29.75	755.6	56	13.3	87	SE	1	0.4			10n		Calm	0.11	2.8	Light rain	
Cleveland, Ohio	29.15	740.4	29.87	758.7	52	11.1	86	NE	6	2.7			10n		Calm	0.31	7.9	Light rain	
Concho, Texas					51	10.6	59	S	6	2.7		0	0			0	0	Clear	
Corsicana, Texas	29.34	745.2	29.81	757.2	56	13.3	87	W	5	2.2		0	0			0	0	Clear	
Davenport, Iowa	29.16	740.7	29.78	756.4	53	11.7	86	NE	7	3.1			10n		Calm	0.20	5.1	Light rain	
Denison, Texas	29.02	737.1	29.81	757.2	55	12.8	86	NW	5	2.2		0	0			0	0	Clear	
Denver, Colorado	24.53	623.0	29.75	755.6	43	6.1	43	SE	4	1.8		0	5s		W	0	0	Fair	
Detroit, Michigan	29.19	741.4	29.86	758.4	45	7 2	100	NE	9	4.0			10n		NE	0.13	3.3	Light rain	
Dodge City, Kansas	27.18	690.4	29.48	748.8	39	3.9	82	W	3	1.3		2c	2s	W	W	0	0	Fair	
Dubuque, Iowa	29.12	739.6	29.82	757.4	47	8.3	85	NE	5	2.2			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.15	740.4	29.80	756.9	46	7.8	76	SE	14	6.3			10ks		SE	Inap.	Inap.	Threatening	
Eagle Pass, Texas	29.14	740.1	29.88	758.9	50	10.0	71	Calm	0	0		0	0			Inap.	Inap.	Clear	
Eastport, Maine	29.99	761.7	30.06	763.5	29	— 1.7	78	NW	10	4.5		0	0			0.20	5.1	Clear	
Erie, Pennsylvania	29.15	740.4	29.86	758.4	47	8.3	92	NE	12	5.4			10n			0.05	1.3	Light rain	
Escanaba, Michigan	29.30	744.2	29.96	761.0	41	5.0	82	NE	8	3.6			10s		NE	0.05	1.3	Cloudy	
Florence, Arizona	28.40	721.3	30.00	762.0	50	10.0	38	N				0	0			0	0	Clear	
Fort Bayard, New Mexico	24.02	610.1	30.02	762.5	41	5.0	57	NE	2	0.9		0	0			0	0	Clear	
Fort Craig, New Mexico	25.51	647.9			37	2.8	80	N	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.24	742.7	29.77	756.1	53	11.7	100	SW	2	0.9			Fog			0	0	Foggy	
Fort Griffin, Texas	28.57	725.7	29.84	757.9	51	10.6	78	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.60	726.4	29.70	754.4	47	8.3	85	Calm	0	0		0	Fog		Calm	0	0	Clear	
Fort Sully, Dakota	27.99	710.9	29.62	752.3	47	8.3	85	Calm	0	0			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.81	757.2	29.85	758.2	67	19.4	94	SW	3	1.3		0	2ks		SW	4.51	114.6	Fair	
Grand Haven, Michigan	29.19	741.4	29.84	757.9	47	8.3	92	E	10	4.5			10s		E	0.03	0.8	Cloudy	
Indianapolis, Indiana	28.99	736.3	29.75	755.6	55	12.8	93	E	3	1.3			10s		Calm	0.25	6.3	Threatening	
Indianola, Texas	29.86	758.4	29.89	759.2	63	17.2	100	NW	5	2.2			Fog		Calm	0.45	11.4	Foggy	
Jacksboro, Texas																			
Jacksonville, Florida	29.84	757.9	29.86	758.4	74	23.3	90	SE	12	5.4			10s		SE	0.12	3.0	Cloudy	
Keokuk, Iowa	29.12	739.6	29.60	751.8	55	12.8	93	E	6	2.7			10n		Calm	1.05	26.7	Light rain	
Key West, Florida	29.92	760.0	29.95	760.7	81.5	27.5	85	S	10	4.5		1k	5ks	S	S	0.33	8.4	Fair	
Kittyhawk, North Carolina	29.86	758.4	29.89	759.2	65	18.3	100	NE	5	2.2			10n		Calm	1.05	26.7	Light rain	
Knoxville, Tennessee	28.84	732.5	29.82	757.4	57	13.9	93	NE	3	1.3			10n			0.29	7.4	Light rain	
La Crosse, Wisconsin	29.08	738.6	29.82	757.4	46	7.8	85	E	4	1.8			10s		Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.08	662.4	30.24	768.1	38	3.3	63	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					54	12.2	86	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	28.91	734 3	29.79	756.7	55	12.8	93	Calm	0	0			Fog			0.17	4.3	Dense fog	
Los Angeles, California	29.61	752.1	29.95	760.7	55	12.8	79	N	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.22	742.2	29.76	755.9	59	15.0	93	S	7	3.1			10s		S	0.07	1.8	Cloudy	
Lynchburg, Virginia	29.15	740.4	29.81	757.2	59	15.0	70	Calm	0	0			10s		W	Inap.	Inap.	Cloudy	
Maricopa Wells, Arizona					42	5.6	67	E				0	0			0	0	Clear	
Marquette, Michigan	29.25	742.9	29.96	761.0	41	5.0	73	SE	2	0.9			10s		Calm	0.10	2.5	Cloudy	
Mason, Texas	28.26	717.8	30.02	762.5	50	10.0	78	W	3	1.3		0	0			0	0	Clear	
Memphis, Tennessee	29.49	749.0	29.80	756.9	62	16.7	88	Calm	0	0			10s		S	0.09	2.3	Cloudy	
Milwaukee, Wisconsin	29.18	741.2	29.86	758.4	50	10.0	100	E	11	4.9			10s		Calm	0.14	3.6	Cloudy	
Mobile, Alabama	29.81	757.2	29.85	758.2	64	17.8	100	N	4	1.8			10n;fg		Calm	2.58	65.5	Light rain	
Montgomery, Alabama	29.61	752.1	29.84	757.9	60	15.6	97	NW	6	2.7			10n		N	0.78	19.8	Light rain	
Morgantown, West Virginia	28.79	731.3	29.83	757.7	52	11.1	72	Calm	0	0			10s		SW	0	0	Cloudy	
Mt. Washington, N. H.	23.65	600.7	30.01	762.2	14	—10.0	63	NE	12	5.4		2cs	5s	NW	NE	0.42	10.7	Clear	
Nashville, Tennessee	29.29	744.0	29.81	757.2	59	15.0	94	S	1	0.4			10s		SW	0.01	0.3	Cloudy	
New Haven, Connecticut	29.94	760.5	30.06	763.5	38	3.3	90	NE	10	4.5			10n		NE	0.10	2.5	Light rain	
New London, Connecticut	30.01	762.2	30.06	763.5	41	5.0	91	NE	7	3.1			10n			0.01	0.3	Light rain	
New Orleans, Louisiana	29.69	754.1	29.74	755.4	65	18.3	94	SE	16	7.2			10s		SW	3.41	86.6	Threatening	
Newport, Rhode Island	30.01	762.2	30.06	763.5	41	5.0	91	NE	8	3.6			10n		N	0.02	0.5	Light rain	
New York, New York	29.84	757.9	30.02	762.5	46	7.8	76	NE	20	8.9			10s		NE	0	0	Cloudy	
Norfolk, Virginia	29.81	757.2	29.87	758.7	60	15.6	100	SW	2	0.9			10n		W	0.11	2.8	Light rain	
North Platte, Nebraska	26.79	680.4	29.36	745.7	36	2.2	80	NW	4	1.8		0	2s		Calm	0	0	Clear	
Olympia, Washington Ter.	29.97	761.2	30.01	762.2	45	7.2	85	SW	9	4.0			10n		SW	0.36	9.1	Light rain	
Omaha, Nebraska	28.62	726.9	29.68	753.9	51	10.6	93	SE	6	2.7			10s		Calm	0.01	0.3	Cloudy	
Oswego, New York	29.70	754.4	30.03	762.7	40	4.4	77	NE	5	2.2			10s		Calm	0.03	0.8	Cloudy	
Pembina, Dakota	28.80	731.5	29.63	752.6	38	3.3	86	SW	6	2.7		0	5s		Calm	0.02	0.5	Fair	
Philadelphia, Pennsylvania	29 87	758.7	29.92	760.0	55	12.8	87	E	20	8.9			10s		E	0	0	Cloudy	
Phœnix, Arizona					52	11.1	41	E				0	0			0	0	Clear	
Pike's Peak, Colorado	17.63	447.8	29.84	757.9	11	—11.7	61	W	56	25.0		0	0			0	0	Clear	
Pioche, Nevada	23.99	609.3	29.76	755.9	40	4.4	56	S	4	1.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.01	736.8	29.81	757.2	52	11.1	86	S	3	1.3			Fog		Calm	Inap	Inap.	Foggy	
Port Huron, Michigan	29.22	742.2	29.90	759.4	40	4.4	100	NE	7	3.1			10n		E	0.16	4.1	Light rain	
Portland, Maine	30.08	764.0	30.14	765.5	34	1.1	61	N	8	3.6		5c;k	Haze	W		0.12	3.0	Fair	
Portland, Oregon	30.09	764.3	30.19	766.8	48	8.9	77	SW	4	1.8			10ks		SW	0.61	15.5	Cloudy	
Prescott, Arizona	24.76	628.9	30.12	765.0	43	6.1	68	NW				0	0			0	0	Clear	
Punta Rassa, Florida	29.93	760.2	29.94	760.5	79	26.1	86	SE	10	4.5		0	8ks		Calm	0	0	Cloudy	
Red Bluff, California	29.71	754.6	30.08	764.0	51	10.6	59	N	14	6.3		0	0			0.02	0.5	Clear	
Rochester, New York	29.36	745.7	29.99	761.7	39	3.9	91	E	8	3.6			10s		E	0.26	6.6	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.68	753.9	30.27	768.8	41.5	5.3	96	Calm	0	0		5k	Fog	SW	Calm	0.09	2.3	Fair	
Sacramento, California	29.97	761.2	30.05	763.3	54	12.2	73	N	12	5.4		8k	0	N		0.02	0.5	Cloudy	
St. Louis, Missouri	29.20	741.7	29.76	755.9	58	14.4	94	S	4	1.8			Fog			0.04	1.0	Foggy	
St. Marks, Florida	29.78	756.4	29.79	756.7	74	23.3	100	S	19	8.5			10n		S	0.68	17.3	Light rain	
St. Paul, Minnesota	28.92	734.6	29.73	755.1	48	8.9	77	SE	10	4.5			10s		Calm	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.58	649.7	29.91	759.7	57	13.9	87	E	1	0.4			10n		Calm	0.05	1.3	Light rain	
San Antonio, Texas	29.16	740.7	29.74	755.4	55	12.8	86	NW	2	0.9		0	0			0.59	15.0	Clear.	
San Diego, California	29.90	759.4	29.97	761.2	60	15.6	94	NE	2	0.9			Fog			0	0	Foggy	
Sandusky, Ohio	29.17	740.9	29.83	757.7	55	12.8	100	E	16	7.2			10n		E	0.27	6.9	Light rain	
Sandy Hook, New Jersey	29.97	761.2	29.99	761.7	48	8.9	92	E	29	13.0			10s		E	0	0	Cloudy	
San Francisco, California	30.00	762.0	30.06	763.5	54	12.2	86	NW	2	0.9		Haze	0	Calm		0.02	0.5	Clear	
Santa Fé, New Mexico	29.23	690.0	29.77	756.1	37	2.8	62	NE	7	3.1		0	Haze			0	0	Clear	
Savannah, Georgia	29.78	756.4	29.87	758.7	69	20.6	95	Calm	0	0			10n		S	0.04	1.0	Light rain	
Shreveport, Louisiana	29.60	751.8	29.82	757.4	63	17.2	94	SW	4	1.8			10s		S	0.04	1.0	Cloudy	
Smithville, North Carolina	29.87	758.7	29.90	759.4	71	21.7	95	W	2	0.9			10s		SW	0.11	2.8	Cloudy	
Springfield, Massachusetts	29.90	759.4	30.04	763.0	39	3.9	63	NE	5	2.2			10s		NE	0.07	1.8	Cloudy	
Stanwix, Arizona																			
Stockton, Texas	26.89	683.0	29.89	759.2	45	7.2	84	SW	4	1.8		0	0			0.04	1.0	Clear	
Thatcher's Island, Mass	30.05	763.3	30.10	764.5	38	3.3	63	NE	24	10.7		10k	0	NE		0.12	3.0	Cloudy	
Toledo, Ohio	29.16	740.7	29.83	757.7	53	11.7	100	N	16	7.2			10n		N	0.16	4.1	Light rain	
Tucson, Arizona	27.59	700.8	30.14	765.5	52	11.1	86	Calm				0	0			0	0	Clear.	
Tybee Island, Georgia	29.83	757.7	29.86	758.4	71	21.7	95	E	4	1.8			10s		Calm	Inap.	Inap.	Threatening	
Umatilla, Oregon	29.65	753.1			46	7.8	60	SW	26	11.6		0	0			Inap.	Inap.	Clear	
Vicksburg, Mississippi	29.58	751.3	29.83	757.7	64	17.8	94	SW	4	1.8			10s		SW	0.24	6.1	Cloudy	
Virginia City, Montana	24.05	610.9	29.53	750.0	30	−1.1	78	SW	8	3.6		0	5s		Calm	0.36	9.1	Fair	
Visalia, California	29.63	752.6	29.99	761.7	62	16.7	88	N	4	1.8		8c	0	NW		0	0	Fair	
Washington, D. C.	29.77	756.1	29.87	758.7	55	12.8	87	NE	4	1.8			10ksam		W;NE	0	0	Cloudy	
Wickenburg, Arizona					38	3.3	30	NE				0	0			0	0	Clear	
Wilmington, N. Carolina	29.80	756.9	29.88	758.9	69	20.6	100	W	4	1.8			10n		W	0.15	3.8	Light rain	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	40	4.4	47	N	11	4.9		0	0			0	0	Clear	
Wood's Holl, Mass	30.00	762.0	30.06	763.5	45	7.2	76	NE	6	2.7			10s		NE	0	0	Cloudy	
Yankton, Dakota	28.38	720.8	29.64	752.8	47	8.3	85	S	4	1.8		0	0			0	0	Clear	
Yuma, Arizona	29.74	755.4	29.91	759.7	53	11.7	42	NE	1	0.4		0	0			0	0	Clear	
Sub-Series.																			
York Factory, B. A.	29.91	759.7	29.96	761.0	17.0	−8.3	92	SE	11	4.9		2c	0	SE		0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.90	759.4	29.92	760.0	81	27.2	87	SE	3.6	1.6		0	0			0.06	1.5	Clear.	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	81	27.2	80	Calm	0	0		8c	2s	SE	Calm	0	0		James Gall.
Navassa, W. I.	29.88	758.9	29.96	761.0	84	28.9		E			2					0.45	11.4	Cloudy	F. M. Everett.
St. Thomas, W. I.					85	29.4	75	E	2	0.9		2c	2ks	N		0.02	0.5		G. O. Gellich.
Paramaribo, D. Guiana, S. A.			29.96	761.0	84	28.9	68	E			2	4k	6ks	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			68.2	20.1	80	E			1	2ck	8ks			0.01	0.3	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.6 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.06	763.5	55	12.8	50	10.0	93	NW	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Pensacola, Fla.	29.92	760.0	.....	.....	66	18.9	89	NW	5	2.2	.....	.....	10	.....	.....	0.97	24.6	.....	.....	Raining.....	
Navy Yard, Portsmouth, N.H	30.17	766 3	70	21.1	31	— 0.6	68	NE	3	1.3	.....	.....	.....	.....	.....	0.1	3.	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	29.86	758.4	60	15.6	52	11.1	76	WNW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Adams, Montevideo, Uruguay.....	29.98	761.5	68	20.0	67	19.4	84	N	.....	.....	2	.....	3	.....	N	0	0	None	.....	D. clouds.....	
Alert, Oki Islands.....	30 11†	764.8†	59	15.0	59	15.0	70	WNW	.....	.....	1-2	.....	1	.....	W	.....	.....	Smooth	.....	D. clouds.....	
Alliance, Constantinople, Turkey.	30.02	762.5	64	17.8	65	18.3	73	SSW	.....	.....	1	.....	3	.....	S&W	.....	.....	.....	.....	Pleasant.....	
Ashuelot, Tientsin, China.....	30.42	772.7	48	8.9	42	5.6	45	S	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky.....	
Canonicus, New Orleans, La.....	29.80	756.9	50	10.0	66	18.9	89	SE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	
Colorado, New York, N. Y.....	30.11	764.8	71	21 7	47	8.3	85	ENE	6	2.7	.....	.....	10	.....	NE	0	0	.....	.....	Threatening	
Despatch, Constantinople, Turkey.	30.04	763.0	70	21.1	66	18.9	74	SE	.....	.....	2	.....	3	.....	Calm	.....	.....	.....	.....	Clear	
Franklin, Norfolk, Va.....	29.97	761.2	6 1	16.1	63	17.2	93	SSE	3	1.3	.....	.....	10	.....	SSE	0.5	13.	.....	.....	Drizzling.....	
Gettysburg, Messina, Italy.....	29.82‡	757.4‡	.....	.....	70	21.1	100	NW	.....	.....	3	.....	3	.....	Calm	Blank	Blank	.....	.....	D. clouds.....	
Kearsarge, N. 12° 35′ E. 46° 40′.....	29.92	760.0	.....	.....	88	31.1	69	NE	.....	.....	2	.....	3	.....	N&E	0	0	Smooth	E	D. clouds.....	
Lackawana, Port Townsend, W. T....	29.97	761.2	.....	.....	49	9.4	71	Calm	.....	.....	0	.....	7	.....	.....	.....	.....	Smooth	.....	Showery.....	
Marion, Smyrna, Turkey.....	29.92	760.0	70	21.1	60	20.0	60	NW	.....	.....	0	.....	1	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Michigan, Detroit, Michigan.....	29.39	746.5	65	18.3	49	9.4	85	E	.....	.....	2	.....	10	.....	E	.....	.....	.....	.....	Raining.....	
Monocacy, Yokohama, Japan.....	29.84	757.9	59	15.0	55	12.8	68	Var.	.....	.....	0-1	.....	1	.....	.....	0	0	Smooth	.....	D. clouds.....	
Monongahela, Gibraltar, Spain.....	30.21	767.3	70	21.1	69	20.6	65	NNW	.....	.....	2	.....	cs	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
New Hampshire, Port Royal, S.C.....	30.05	763.3	.....	.....	72	22.2	95	ENE	8	3.6	.....	.....	10	.....	.....	0.02	0.5	.....	.....	Showery.....	
Omaha, S. 32° 50′, W. 71° 40′.....	30.06	763.5	64	17.8	59	15.0	91	N	4	1.8	.....	.....	10	.....	N	0	0	Smooth	.....	Cloudy.....	
Onward, Callao, Peru.....	30.12†	765.0†	70	21.1	67.5	19.7	87	ESE	.....	.....	2	.....	1s	.....	.....	.....	.....	Long	W	D. clouds....	
Ossipee, New York, N. Y.....	30.07	763.8	73	22.8	47	8.3	85	NE	.....	.....	5	.....	10	.....	NE	.....	.....	.....	.....	Squally.....	
Palos, Shanghai, China.....	30.40	772.1	59	15.0	50	10.0	58	SW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Pensacola, Mare Island, Cal.....	30.14	765.5	.....	.....	55	12.8	87	S&N	.....	.....	0-1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Plymouth, Norfolk, Va.....	30.15†	765.8†	68	20.0	64	17 8	94	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	
Ranger, Shanghai, China.....	30.44	773.2	.....	.....	61	16.1	71	WNW	.....	.....	2	.....	1s	.....	NW	.....	.....	.....	.....	Clear....	
Rio Bravo, Brownsville, Texas.....	29.85	758.2	.....	.....	67	19.4	95	NW	.....	.....	1	.....	1	.....	W	.....	.....	.....	.....	D. clouds.....	
Santee, Annapolis, Md.....	29.94	760.5	66	18.9	60	15.6	88	SE	.....	.....	.....	.....	9	.....	.....	0	0	.....	.....	Overcast.....	
St. Louis, League Island, Pa	29.88	758.9	56	13.3	60	15.6	82	NE	8	3.6	.....	.....	10	.....	E	0	0	.....	.....	Overcast.....	
Swatara, N. 37° 53′, W. 74° 14′.....	29.91	760.5	.....	.....	64.5	18.1	84	SE	.....	.....	1	.....	10	.....	S&E	.....	.....	Smooth	.....	Raining.....	
Tennessee, Yokohama, Japan.....	29.86	758.4	63	17.2	57	13.9	75	SW	3	1.3	.....	.....	1	.....	.....	0	0	Smooth	.....	D. clouds.....	
Trenton, Villefranche, France.....	29.94†	760.5†	66	18.9	65	18.3	68	E	7	3.1	.....	.....	5	.....	E	0	0	.....	.....	D. clouds. ...	
Vandalia, Villefranche, France.,...	29.86	758.4	65	18.3	64	17.8	68	SE	.....	.....	1	.....	3	.....	N	.....	.....	.....	.....	D. clouds.....	
Wabash, Boston, Mass.....	30.09	764.3	45	7.2	39	3.9	64	NNE	8	3.6	.....	.....	9	.....	Calm	0.06	1.5	.....	.....	D. clouds....	
Wyoming, Washington, D. C.....	.....	.....	.....	.....	67	19.4	.....	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	D. clouds.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	HOURLY RATE IN KNOTS.	BAROMETER REDUCED TO SEA-LEVEL. Inches.	BAROMETER REDUCED TO SEA-LEVEL. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 26° 30′, E. 120° 14′			30.45*	773.4*	65	18.3	78	NE			6		0			Moderate	NE	Blue sky	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic, N. 34° 22′, W. 133° 23′			30.44†	773.2†				N			4		Light		WNW	Moderate.	WNW	Fine	Capt. John Metcalf.
S. S. Gaelic, N. 44° 34′, W. 150° 11′			30.59*	777.0*	54	12.2	??	W			4		8; N		W	Heavy	NW	Overcast	Capt. W. H. Kidley
S. S. Oceanic, N. 26° 8′, E. 119° 43′			30.10	764.5	66	18.9	80	NNE			5		8		NNE	Moderate	NW&N	D clouds	Capt. H. Parsell
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 48° 9′, W. 30° 1′	N80E	11.6	29.60	751.8	50.0	10.0	93	WSW			6		5n		W	Heavy		Squally	Capt. K. Undütsch.
S. S. Nürnberg, N. 38° 13′, W. 71° 26′			29.90	759.4	69.5	20.8	80	NE			1		10		E	Tranq'l		Drizzling	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known. *Aneriod.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character	Sea-swell. Direction From—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, *N. 43° 14′, W. 61° 04′			30.05*	763.3*	45	7.2	76	NNW			6		8		NNE	Moderate.	WNW	Fine	Captain Sargent.
S. S. Ohio. Philadelphia, Pa.			29.99	761.7	52	11.1	86	SSW			2		10					Dull	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.81†	757.2†	54	12.2	97	WSW			2		4		WSW			Clear	Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 45° 22′, W. 58° 53′			29.80*	756.9*	44	6.7		N	25	11.2			10		N	Smooth	WSW	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 40° 07′, W. 73° 44′			29.92	760.0	58	14.4	88	E	19	8.5			10d		E	Rough	E	Threatening	Capt. James Jorgensen.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

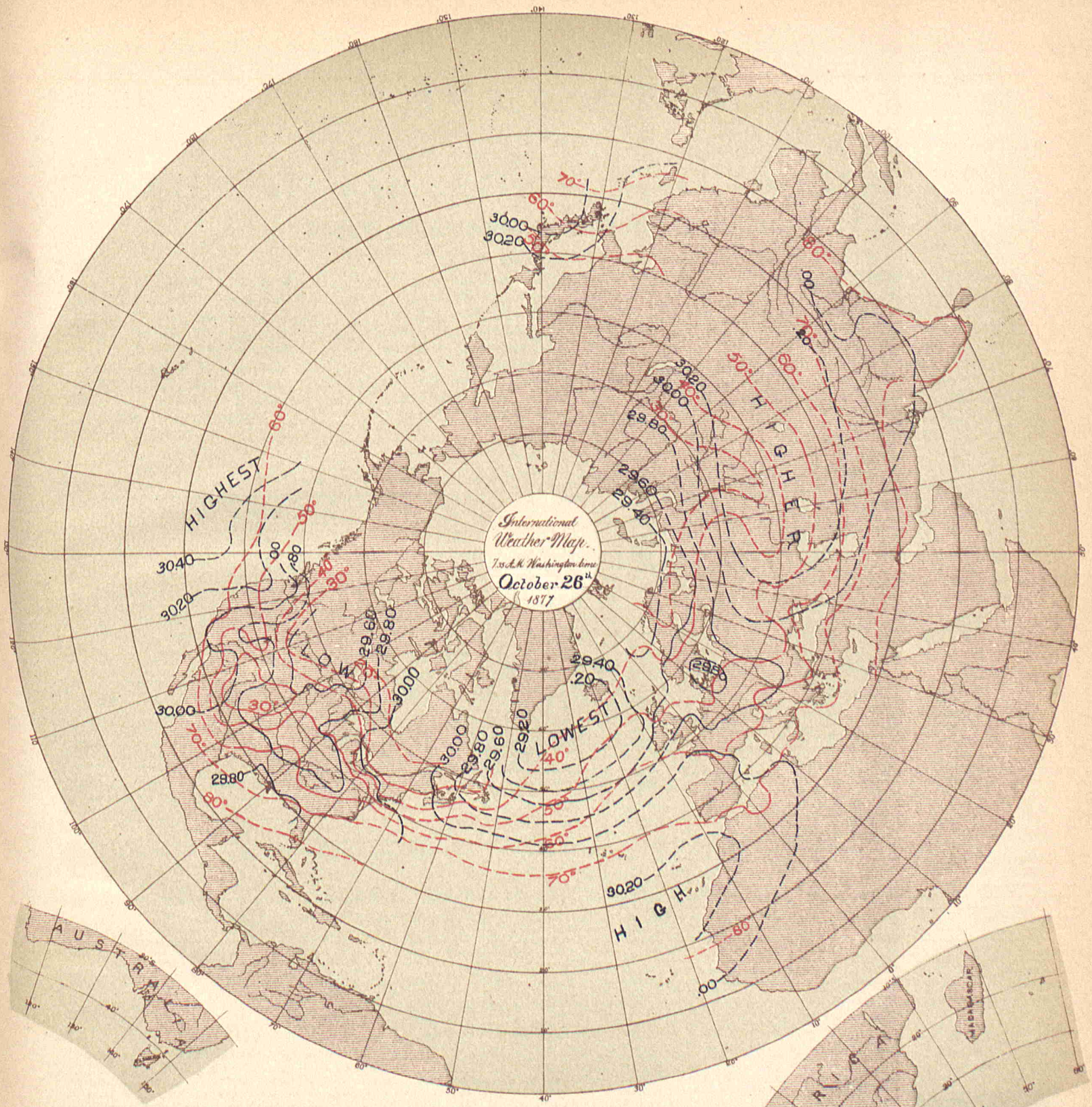
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 27, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.21	767.4	72.9	22.7	69	NNW			1		0			0	0	Clear	Michel.
Algiers			30.13	765.2	68.7	20.4	72	N			2		2			0	0	Fair	Peter.
La Calle			30.16	766.0	62.8	17.1	92	W			2		8			0.118	3.0	Very cloudy	Fleury.
Tunis			30.10	764.5	69.8	21.0	47	NW			5		4			0	0	Cloudy	Jacques.
Sfax			30.06	763.5	73.4	23.0		NW			3		8			0	0	Very cloudy	Husson.
Saida			30.21	767.4	70.5	21.4	34	NE			1		2			0	0	Fair	Millot.
Tebessa			30.13	765.3				SSW			1		4			0	0	Cloudy	Bourgeois.
Geriville			30.21	767.3	64.4	18.0	56	NNW			2		3			0	0	Pretty fair	Lemaillot.
Laghouat			30.21	767.3	69.8	21.0	34	W			2		2			0	0	Fair	François.
Biskra			30.20	767.1	79.0	26.1	43	Calm			0		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.54	750.2	30.09	764.2	52.7	11.5	84	SW			2		10			0.083	2.1		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.32	744.8	30.10	764.6	48.2	9.0	73	WNW			3		10			0	0		Dr. Wierzbiski.
Eperies	29.12	739.6	30.00	761.9	54.3	12.4	64	NE			1		9c;s			0	0		Julius Mikolik.
Gratz	28.83	732.2	30.08	764.1	55.9	13.3	62	SSW			2		3			0	0		Andreas Rospini.
Hermannstadt	28.54	724.8	29.95	760.7	54.7	12.6	56	SE			2		3			0	0		Prof. Reissenberger.
Kremsmünster	28.79	731.2	30.15	765.7	48.9	9.4	82	WNW			2		10			0	0		Prof. C. Wagner.
Lemberg	28.99	736.3	29.98	761.5	50.9	10.5	84	NW			1		9			0	0		Dr. T. Stanecki.
Pola	29.91	759.6	30.02	762.5	58.3	14.6	55	E			5		9s			0.011	0.29		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.69	754.2	29.97	761.3	56.5	13.6	80	NW			3		10			0	0		Karl Stancel.
Trieste	29.96	760.9	30.06	763.5	60.8	16.0	77	E			2		0			0	0	Clear.	P. Busin.
Vienna	29.42	747.3	30.12	765.1	53.4	11.9	55	NW			2		8			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.63	727.3	30.18	766.5	43.3	6.3	96	SW			1		10			0.181	4.6		Prof. M. Passau.
Brussels	29.85	758.1	30.05	763.2	54.3	12.4	71	SSW			4		10		SW	0.067	1.70		Royal Observatory.
Furnes	29.96	760.9	29.98	761.5	54.9	12.7	81	SW			4		8			0.169	4.3		M. E. de Cae.
Maeseyck	29.96	761.0	30.09	764.3	53.1	11.7	87	SSW			4		2			0.083	2.1		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.29	744.0	29.39	746.5	51.1	10.6		SSW	25	11.2			4					Blue sky	W. Boswell.
Ardrossan	29.44	747.8	29.45	748.0	54	12.2		WSW			6		6					D. clouds	William McNeil.
Armagh, Observatory			29.53	750.0	51.9	11.1		SSW	20	8.9			10					Squally	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.66	753.4	55.0	12.8		WSW	26	11.6			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			29.62	752.3	52.4	11.3		SW			3		10					Showery	J. Dreyer.
Bradford, Yorkshire	29.25	742.9	29.64	752.8	49.3	9.6		S			5		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	82	27.8		NE			1		3					D. clouds	Pvt. G. W. Roberts, A
Cambridge, Observatory			29.83	757.7	55.8	13.2		S			2		10			Blank	Blank	Overcast	H. Todd. [H. C.
Cardington			29.77	756.1	55.0	12.8		SW			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.76	755.9	29.89	759.2	54.2	12.3		SW			3		9					Showery	Lt. Col. C. M. Martin, R.E.
Dartmoor	28.03	711.9	29.48	748.8	50.8	10.4		SW			3		4					Gloomy	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.48	748.8	29.51	749.5	54	12.2		SW			5		8					D. clouds	J. Mac Gowan.
Dover	29.92	760.0	29.94	760.5	56	13.3		SW			5		5					½ clouded	J. Costello.
Eccles, (near Manchester)			29.69	754.1	58.7	14.8		SW	6.4	2.9			6					Showery	Thomas Mackereth.
Falmouth, Observatory	29.64	752.8	29.87	758.7	58.5	14.7		WSW			4		7					Ove, cast	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.86	758.4	61.3	16.3		E			2		10					Raining	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.98	761.5	86	29.4		Calm			0		4					D. clouds	
Galway, Queen's College					58	14.4		SW			5		8					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.10	764.5	30.14	765.5	69.0	20.6		SW			5		1					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.25	742.9	29.46	748.3	51.9	11.1		WSW			4		3					Blue sky	D. G. Maclean.
Great Yarmouth	29.85	758.2	29.86	758.4	55	12.8		SSW			4		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.69	754.1	29.86	758.4	56.7	13.7		SSW			3		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.73	755.1	29.95	760.7	57	13.9		SW			4		8					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.85	758.2	60	15.6		W			4		3			0.6	15.	D. clouds	M. P. Moyle.
Holyhead	29.61	752.1	29.66	753.4	55	12.8		SW			5		1					Blue sky	John Tilston.
Jersey	29.71	754.6	30.00	762.0	58.2	14.6		SW			6		10					Overcast	J. Fisher.
Kew, Observatory			29.86	758.4	56.6	13.7		SSW	22	9.8			9kd					Threatening	The Staff.
Kingstown	29.61	752.1	29.64	752.8	55	12.8		WSW			4		1					Blue sky	George Mitchell.
Leicester, Museum			29.77	756.1	52.0	11.1		SW			5		10					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.84	757.9	29.91	759.7	69.0	20.6		NW			2		8					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.19	741.4	29.28	743.7	49	9.4		NW			3		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.96	761.0	83.5	28.6		SE			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.56	750.8	29.75	755.6	54.5	12.5		SSW			5		7c		SSW	0.069	1.75	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.22	742.2	29.74	755.4	55.0	12.8		SSW			5		8					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.80	756.9	56	13.3		SSW			4		10					Raining	F. Lucas
Plymouth	29.78	756.4	29.86	758.4	55.5	13.1		SW			3		10					Raining	John Merrifield.
Roche's Point	29.68	753.9	29.73	755.1	54	12.2		W			5		5					Showery	W. Kennedy.
Saint Ann's Head	29.60	751.8	29.76	755.9	56	13.3		WSW			6		2					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			29.23	742.4	51.6	10.9		SSW	20	8.9			2					D. clouds	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.90	759.4	64.8	18.2		ENE			2		4					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.43	747.5	29.67	753.6	55.4	13.0		SW			4		7			0.06	1.5	Overcast	W. F. Cooper.
Silloth Rectory	29.53	750.0	29.56	750.8	56.6	13.7	79	SW			6		0			0.075	1.40	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					53.2	11.8		SW			4		5					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.13	739.9	52	11.1		SSW			6		10					Overcast	John Smith.
Stratfield Turgiss	29.66	753.4	29.88	758.9	54.5	12.5		SW			2		8					Showery	Rev. C. H. Griffith, F.M.S.
Thurso			29.21	741.9	54	12.2		SSW			4		7					D. clouds	John Trotter.
Truro, Royal Institution			29.90	759.4	59	15.0		W			6		4					D. clouds	W. Newcombe.
Valencia, Observatory			29.69	754.1	52.0	11.1		WSW	37	16.5			10					Showery	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		W			7		0			1.	25.		Henry Mercer.
Cape Good Hope, Obs'y	29.79	756.7	29.83	757.7	63.8	17.7	84	WNW	13	5.8		10	10						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.51	749.5	57.0	13.9	77	NW			3		10kn			0.03	0.8		Francis Abbott, F.R.A.S.
Leith, Restalrig Park			29.49	749.0	54.0	12.2		SW			5		2k			0.04	1.0	Cloudy	Andrew Gibb.
Mauritius, Observatory	29.90	759.4	30.09	764.2	72.5	22.5	79	SW	11.0	4.9		1	8			0	0	Gloomy	C. Meldrum.
Melbourne, Observatory	29.76	755.9	29.85	758.2	54.3	12.4	84	SE	2	0.9			4			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.15	740.4	52	11.1		SSW			8		10			0.3	8.	Lightning	J. Youngclause.
North Unst, (Shetland Is.)			29.27	743.4	50	10.0		S			8	10	10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, Liverpool			29.65	753.1	55	12.8		W			3		6			*0		D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 48° 10′, W. 33° 25′			29.25	742.9	59	15.0		SSE			8		10			8	Confused	Raining	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			29.72	754.9	56	13.3		WSW			6		3					Showery	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.19	665.2			68.0	20.0	91	NE			3	1ck				Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.04	763.0	30.09	764.2	39.9	4.4	87	SE			2		8						
Fanöe	30.00	762.0	30.02	762.5	46.9	8.3	86	S			4		5						
Godthaab, (Greenland)	29.26	743.1	29.30	744.2	28.9	— 1.7	72	NNE			4		0						
Stykkisholm, (Iceland)	28.95	735.2	28.99	736.3	37.2	2.9	79	NE			7		5						
Thorshavn, (Faröe)	28.95	735.3	28.98	736.2	46.9	8.3	79	S			4		10						
Vestervig	29.82	757.4	29.99	761 7	44.6	7.0	82	SSE			4		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.60	751.7	30.15	765.7	55.4	13	87	SW			2		8		SW	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	29.93	760.2	30.04	763.0	57.2	14.0	71	WSW			2		5		W	0	0	Cloudy	Bonvarne, Director.
Avignon, Normal School	29.99	761.7	30.07	763.7	61.3	16.3	59	N			3		0			0	9	Clear	Mr. Giraud, Director.
Bar-sur-Seine	29.58	751.4	30.15	765.8	54.9	12.7	78	S			1		10		SW	0.039	1.0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.91	759.8	30.08	764.0	56.5	13.6	77	SW	3.6	1.6					SW	0	0		Albert Cheux.
Beauvais	29.80	756.8	30.08	764.1	55.2	12.9	67	WSW			3		8		WSW	0.059	1.50	Very cloudy	Normal School.
Besançon	29.27	743.4	30.17	766.3	53.2	11.8	73	W			2		2		NE	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse	29.32	744 7	30.24	768.1	55 0	12.8	72	W			2		2k		W	0.252	6.4	Slightly cl'dy	Normal School.
Bourges, Normal School	29.56	750.9	30.12	765.0	55.0	12.8	81	SW			2		5		ENE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.72	755.0	29.94	760.5	58 1	14.5	86	SW			4		10		SW	0.010	0.25	Squally	The Staff.
Carcassonne, Normal School	29.71	754.5	30.12	765.0	60.4	15.8	69	W			2		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.95	760.7	30.02	762.6	57.2	14	100	N			1		0			0	0	Clear	Normal School.
Chartres, Normal School	29.50	749.2	30.07	763.6	56.1	13.4	86	W			2		6		E	0	0		Leguin, Director.
Châlons-sur-Marne, N. Sch'l	29.82	757.4	30.14	765.5	53.6	12.0	78	SW			1		5ck		SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.74	730.1	30.09	764.8	58.3	14.6	68	W			1		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.27	743.5	30.17	766.2	48.9	9.4	89	SW			2		2ck		SW	0.43	11.	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.95	735.4	30.10	764.4	59.9	15.5	53	NW			2		2		NW	0	0	¼ covered	J. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.93	760.2	30.15	765.7	55.8	13.2	82	S			2		10			0	0	Covered	Moullot, Director.
Le Mans, Normal School	29.79	756.6	30.10	764.5	54.5	12.5	81	SW			2		2		SW	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.23	742.4	30.16	766.0	50.0	10	89	N			1		2		S	0	0	Slightly cl'dy	Pin, Director.
Lorient, Naval Observatory	29.97	761.1	30.07	763.6	61.2	16.2	67	SW			2		5		W	0.118	3.0	½ covered	T. Carré, Director.
Mâcon, Normal School	29.48	748.7	30.14	765.5	52.7	11.5	90	Calm			0		0			0	0	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.15	740.5	30.21	767.4	50.9	10.5	84	SE			1		2		NW	0.04	1.	Slightly cov.	Normal School
Nismes, Normal School	29.83	757.6	30.03	762.7	60.8	16	81	N			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.83	757.6	30.24	768.1	54.0	12.2	80	S			2		8		SSW	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.86	758.5	30.10	764.6	56.3	13.5	63	SW			2		9ck		SW	Inap	Inap.	Almost cov'd	National Observatory.
Privas	29.04	737.6	30.11	764.8	54.5	12.5	53	W			4		2			0.16	4.	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.10	764.5	30.13	765.3	60.8	16.0	64	SSE			3		8		S	0.08	2.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.96	760.9	30.04	763.1	58.1	14.5	71	SSE			2		2			0	0	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.08	738.6	30.15	765.7	62.6	17	33	SE			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.48	748.8	30.19	766.8	59.9	15.5	75	NNW			1		2		Calm	0	0	Slightly cl'dy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.74	755.4	29.77	756.1	81.0	27.2										0.24	6.		L'Abbé Marchési.
Marseilles, Observatory			30.03	762.8	63.7	17.6	68	NW			0–1		6			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.94	633.4	30.25	768.4	52.0	11.1	32	SW	9.3	4.17			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.82	757.4	30.10	764.4	56.1	13.4	64	SW			3–4		10		SW	0	0		Marié Davy, Director.
Perpignan			30.19	766.7	61.0	16.1	53	SE	7.4	3.33			2		SW	0	0		Dr. Flues.
Pic du Midi, (Summit,) H. P.	21.31	541.3			41.0	5.0		WNW			2		4					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.60	574.0			46.0	7.8		WNW			4		4			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.93	760.3	30.10	764.5	56.8	13.8	65	SW			2		10k		SW	0	0		E. Renou.
Toulouse, Observatory	29.45	748.1	30.18	766.6	57.7	14.3	61	NE			1		3			0	0		The Staff.
Tours	29.93	760.2	30.13	765.2	56.7	13.7	67	W			1		10		W	0	0		C. Marquet.
Versailles, (near Paris)			30.10	764.6	55.4	13.0	70	SW			2		10			0.069	1.76	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.36	771.2	30.39	771.8	50.4	10.2	82	SE	3.1	1.4			3k			0	0	Fair	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7. 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 303 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,368 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.98	761.5	30.15	765.8	48.6	9.2	64	SW			1		3			0.142	3.61		Prof. Arndt.
Breslau	29.60	751.9	30.13	765.4	45.7	7.6	81	WNW			3		10			Inap.	Inap.		Royal University Obs'y.
Carlsruhe	29.71	754.7	30.15	765.7	52.5	11.4	80	SW			1		1			Blank	Blank		Albert Senz.
Cassel	29.58	751.2	30.19	766.7	49.5	9.7	74	SE			2		3	WSW		0.058	1.47		Dr. H. Möhl.
Crefeld	29.92	760.0	30.08	764.1	52.7	11.5	79	SE			2		7ck			0	0		Director Lose.
Emden	30.06	763.4	30.09	764.3	48.2	9.0	92	S			3		9			0	0		Prof. Prestel.
Frankfort on the Main	29.84	757.8	30.21	767.2	52.5	11.4	70	E?			1		8			0.004	0.1		Physical Society.
Friedrichshafen	28.71	729.3	30.16	766.0	52.5	11.4	82	SSW					0			0	0		M. Wilhelm.
Hamburg	30.04	763.1	30.11	764.9	47.8	8.8	76	S			1		0			0	0	Very fine	Captain F. Hegemann.
Kiel	30.09	764.2	30.10	764.6	45.0	7.2	77	SW			1		0			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.86	758.4	29.94	760.5	46.0	7.8	93	S										Covered	Prof. E. Luther.
Köslin			30.05	763.3	46.0	7.8		N			2		4			0	0		H. Müller.
Leipsic, Observatory	29.78	756.4	30.21	767.3	46.8	8.2	67	SW			1		2			0.039	1.0		Prof. Bruhns.
Memel, Naval School	29.93	760.1	29.97	761.3	45.7	7.6	91	NE			1		10n						Reinbrechtvon Skalweit.
Neufahrwasser	29.97	761.2	29.98	761.6	47.8	8.8	93	N			4		10			0.335	8.5	Rain and fog	A. Lothes.
Posen	29.80	756.9	30.10	764.5	46.4	8.0	93	NW			6-7		10			0.122	3.1	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.61	752.2	30.17	766.4	50.9	10.5	80	S			1		4	W		0.342	8.68		Dr. Schur.
Stuttgart	29.18	741.2	30.13	765.2	53.1	11.7	72	N			1		5	W		0	0		Prof. Schoder.
Treves, (Trier)	29.52	749.8	30.04	763.1	48.0	8.9	83	W			4		10			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.63	727.2	30.15	765.8	50.5	10.3	69	SW			1		7kn		SW	0.024	0.6		Dr. Von Bebber.
Wustrow, Naval School	30.14	765.5	30.18	766.6	45.7	7.6	82	N			2		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.54	750.3	29.93	760.2	61.3	16.3		NE										Raining	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.96	761.0	30.01	762.3	86.0	30.0	48	WSW	10.0?	4.5?			0			0	0	Blue sky	
Deesa	29.58	751.4	30.06	763.5	85.7	29.8	32	Calm					0			0	0	Blue sky	
Bombay	29.93	760.2	29.97	761.2	84.3	29.1	70	WNW	17.0	7.6			4	SW	WSW	0	0	Misty	
Poona	27.97	710.8	29.98	761.4	78.1	25.6	69	SE					6		S	0	0	D. clouds	
Lahore	29.25	742.9	30.00	762.1	77.5	25.3	34	Calm	0.6	0.3			6		S	0	0	Cloudy	
Belgaum	27.41	696.3	29.98	761.5	72.1	22.3	79	Calm					8		E	0.01	0.3	D. clouds	
Bangalore																			
Roorkee	29.09	739.0	30.00	762.0	78.8	26.0	40	Calm	0.8	0.4						0	0		
Agra	29.42	747.3	29.99	761.8	79.8	26.6	41	W								0	0		
Trichinopoly																			
Nagpur	28.97	735.8	30.03	762.7	74.6	23.7	49	Calm	2.1	0.9			2			0	0	Blue sky	
Madras																			
Lucknow	29.64	752.7	30.01	762.3	78.3	25.7	51	Calm	0.4	0.2						0	0	Blue sky	
Allahabad	29.70	754.3	30.02	762.4	72.2	22.3	45	Calm	0.7	0.3			0			0	0	Blue sky	
Patna	29.82	757.4	30.00	762.1	75.5	24.2	81	E	1.1	0.5			8	E	E	0	0	D. clouds	
Hazaribagh	27.99	710.9	30.04	763.0	71.0	21.7	45	NW	5.3	2.4			2			0	0		
Cuttack	29.94	760.4	30.02	762.5	79.3	26.3	66	ENE	0.5	0.2			1			0	0	Foggy	
Calcutta (Alipore)	29.98	761.5	30.00	762.1	77.9	25.5	78	NW	3.0	1.3			4			0	0	D. clouds	
Goalpara	29.59	751.6	29.98	761.5	81.8	27.7	62	Calm	2.0	0.9			1	W		0	0	D. clouds	
Chittagong	29.93	760.1	30.02	762.5	78.4	25.8	82	SSW	7.1	3.2			0			0	0	Gloomy	
Sibsagar	29.70	754.3	30.04	763.0	75.6	24.2	74	E	1.2	0.5			6			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.65	727.7	30.04	763.0	75.0	23.9	57	NE	1.4	0.6						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.22	564.3	30.10	764.4	32.4	0.2	72	NNW			2		3	NNW		0	0		Ab. Dom. Mongini.
Stelvio	22.19	563.5	30.12	765.0	30.9	— 0.6		WSW			1		7	SSE		0.020	0.5		Signora Ernesta Manfredi.
Udine	29.62	752.3	30.04	762.9	59.9	15.5	54	Calm	0	0			3			0	0		Prof. Giovanni Clodig.
Padua	29.93	760.1	30.04	762.9	60.3	15.7	62	E	3.1	1.4			5	NNW		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.84	757.9	30.04	762.9	62.6	17.0	56	ENE	0	0			4	W		0	0		Conte Alm. Da Schio.
Verona	29.78	756.5	30.01	762.2	65.3	18.5	67	SSW	6.9	3.1			4			0	0		Dott. B. Bertoncelli.
Bergamo	28.77	730.8	30.10	764.5	58.6	14.8	66	SE			1		3			0	0		Prof. Trionfini Carlo.
Domodossola	28.99	736.4	30.04	762.9	59.9	15.5	48	S			4		1			0	0		Prof. Giuseppe Calza
Milan	29.54	750.2	30.06	763.5	53.2	11.8		NW			1		0			0	0		Ab. Gio. Capelli.
Pavia	29.71	754.7	30.07	763.6	51.3	10.7	90	NW			1		0			0	0		Prof. Gio. Cantoni.
Moncalleri	29.15	740.4	30.08	763.9	58.5	14.7	53	NNE	0	0			1			0	0		Prof. P. F. Denza.
Mondovi	28.13	714.6	30.07	763.7	57.6	14.2	37	NNW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.83	757.7	30.05	763.3	62.6	17.0	68	SW			2		3			0	0		Prof. L. Vassallo.
Genoa	29.85	758.1	30.02	762.4	66.6	19.2	43	SW	1.3	0.6			0			0	0		Prof. G. M. Garibaldi
Piacenza	29 80	757.0	30.06	763.5	57.0	13.9	69	N	3.8	1.7			0			0	0		Dott. G Manzi.
Parma	29.74	755.4	30.07	763.8	59.9	15.5	48	NE			2		0			0	0		Prof. P. Pigorini.
Florence	29.78	756.3	30.04	762.9	61.7	16.5	60	N			2		0			0	0		Cav. F Meucci.
Leghorn	29.93	760.3	30.02	762.5	61.9	16.6	67	NW	3.1	1.4			1			0	0		Prof. P. Monte.
Siena	28.80	731.6	30.06	763.5	59.0	15.0	55	E	1.3	0.6			1	W		0	0		Prof. L. Toscani.
Urbino	28.50	723.8	30.07	763.8	51.4	10.8	83	NNE			4		10			0	0		Prof. P. Serpieri.
Pesaro	30.00	762.1	30.06	763.4	55.6	13.1	81	N	39.1	17.5			10			0	0		Prof. Luigi Guidi.
Ancona	29.88	759.0	29.99	761.7	56.8	13.8	86	NW			6		10	NW		0.024	0.6		Prof. F. DeBosis.
Grosseto	29.91	759.8	30.03	762.7	63.0	17.2	56	NNW			4		3	SE		0	0		Avv. P. Ponticelli.
Rome	29.80	756.8	29.97	761.3	64.9	18.3	62	NW	3.1	1.4			3			0	0		Prof. P. A Secchi.
Naples, O. U	29.78	756.3	29.98	761.4	66.2	19.0	58	N			4		8	SE		0.016	0.4		Prof. L. Palmieri.
Lecce					65.1	18.4	69	NNW	12.5	5.6			6	N		0	0		Prof. C. De Giorgi.
Cosenza	29.08	738.5	29.97	761.2	64.0	17.8	78	SW	0	0			5			0.067	1.7		Prof. F. D. Conti.
Cagliari	29.79	756.6	29.98	761.4	65.7	18.7		NW			6		5	NW		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.86	758.4	29.91	759.6	70.3	21.3	52	E			2		9			0	0		Prof. F. Cafiero.
Palermo	29.66	753.4	29.92	759.9	62.8	17.1	75	WNW	4.9	2.2			10	WNW		0.012	0.3		Prof. G. Cacciatore.
Caltanissetta	27.96	710 2	29.90	759.4	61.3	16.3	51	NW			4		3	S		0	0		Prof. A. Pagani.
Syracuse	29.81	757.2	29.89	759.1	66.2	19.0	61	SE			1		4	S		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.44	747.7	29.99	761.8	63.1	17.3	66	SW	0	0			8			0.024	0.6		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.00	762.0	30.10	764.5	46	7.8	54	N	8	3.6						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.11	587.1	30.15	765 8	57.2	14.0	76	Calm	0	0		0	10k		W	0	0	Foggy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594,2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.02	762.6	30.02	762.6	53.6	12.0		S			4					0.620	0.5		
Groningen	30.00	761.9	30.05	763.3	45.9	7.7		S			2					0	0		
Helder	29.97	761.2	29.97	761.2	49.1	9.5		S			4					0.209	5.3		
Hellevoetsluis			30.00	762.0	55.4	13.0	84	S			4								
Utrecht	30.01	762.2	30.06	763.4	51.1	10.6	84	SSE			3		5			0	0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.66	753.3	29.71	754.7	48.6	9.2	66	S	39.4	17.6			4			0.181	4.6		
Brönö	29.72	754.8	29.76	755.8	41.9	5.5	53	SSE	9	4			3			0	0		
Christiania	29.89	759.1	30.04	763.0	36.5	2.5	75	NW	0	0			8			0.016	0.4		
Tromsö	29.62	752.4	29.67	753.5	34.9	1.6	71	SW	13	6			5			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.87	758.8	30.07	763.7	63.3	17.4	98	S	3.8	1.7			7			0.669	17.0			Dr. J. A. Sampaio
Campo Major	29.18	741.2	30.19	766.7	71.2	21.8	59	Calm	0	0			9			0	0			Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.12	765.0	30.19	766.8	72.0	22.2	64	S	1.3	0.6			5			0	0			Capt. D. A. de Cunha.
Lisbon, Observatory	29.84	757.9	30.19	766.9	66.9	19.4	92	SW	8.7	3.9			9			0.035	0.9			The Staff.
Ponta Delgada, (Azores)	30.04	763.1	30.11	764.9	72.0	22.2	77	SW	7.4	3.3			4			0	0			

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.57	751.0	29.99	761.8	46.8	8.2	88	SW	13	6			10							Astronomical Obs.
Wilna	29.57	751.0	29.99	761.7	48.4	9.1	75	S	2	1			10							Astronomical Obs.
Dorpat	29.79	756.6	30.04	762.9	42.4	5.8	99	ESE	2	1			10						Foggy	Prof. Dr. Weihrauch
St. Petersburg	30.01	762.3	30.03	762.7	43.9	6.6	88	S	4	2			10							Central Physical Obs.
Kuopio	29.72	754.9	30.06	763.4	34.7	1.5	78	WNW	7	3			0							Ch. Forsten.
Kieff	29.40	746.5	30.04	763.0	46.4	8.0	82	WSW	4	2			10							Physical Cabinet.
Nikolaiev	30.03	762.7	30.10	764.5	54.1	12.3	78	E	0	0			8							Kurdakof.
Kertch	30.05	763.3	30.07	763.8	59.4	15.2	85	NNW	7	3			3							Lagorio.
Moscow	29.67	753.6	30.23	767.8	45.0	7.2	94	S	9	4			8							Meteorological Obs.
Lugan	29.92	760.0	30.13	765.2	52.5	11.4	66	ESE	22	10			8							Meteorological Obs.
Archangel	29.91	759.8	29.93	760.3	34.5	1.4	96	SSW	7	3			10							Ogorodnikof.
Tiflis	28.76	730.6	30.19	766.7	55.6	13.1	76	Calm	0	0			10							Physical Observatory.
Astrakhan	30.38	771.7	30.30	769.6	50.2	10.1	59	ESE	9	4			3							Sebastianof.
Kasan	30.13	765.3	30.41	772.4	44.1	6.7	58	SSW	2	1			0							Physical Cabinet.
Orenburg	29.64	752.9	30.03	762.7	35.4	1.9		E	13	6			2							Tschernischef.
Ekaterinburg	29.41	747.0	30.38	771.7	42.1	5.6	40	WSW	7	3			8							Meteorological Obs.
Nukuss	30.01	762.3	30.25	768.3	54.3	12.4	42	NE	4	2			3							
Kasaly																				Bobrof.
Tashkend	28.65	727.8	30.41	772.5	47.1	8.4	77	NW	2	1			0							Michelson.
Barnaul	29.83	757.7	30.37	771.5	35.1	1.7	94	Calm	0	0			8							Meteorological Obs.
Yeniseisk	29.87	758.8	30.02	762.5	33.4	0.8	94	NW	4	2			10						Snowing	Marks.
Irkutsk																				Usolzef.
Oorga																				Mossin.
Peking, (China)	30.07	763.8	30.21	767.4	51.1	10.6	40	Calm	0	0			0							Physical Observatory.
Nertchinsk																				Meteorological Obs.
Vladivostock																				
Nikolaievsk, on the Amoor					20.3	— 6.5	87	Calm	0	0			0							

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																				Antonio Rave, Director.
Bilbao, Met. Obs'y																				Prof. Manuel de Naveran.
Burgos, Met. Obs'y																				Domingo Martin y Perez.
Madrid, Royal Observatory	27.94	709.8	30.15	765.8	64.2	17.9	72	SW	7.4	3.33		0	10			0	0	Covered		The Staff.
Murcia, Met. Obs'y																				Olayo Diaz, Director.
Santiago, Met. Obs'y																				R. Gil Villanueva, Dir
Sub-Series.																				
Havana, Cuba, W. I.	29.89	759.2	29.97	761.3	78.7	25.9	90	Calm	0	0		4c;cs	0	W		0	0	Clear		Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.11	764.7	30.20	767.2	67.8	19.9	83	WNW	9.2	4.1		0	5		NW	0	0			Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.87	758.6	81.0	27.2	86	SW				3k	1k	SE	SE	0.020	0.50			Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. m. instead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Low'r 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.98	761.5	30.02	762.5	21.2	— 6.0	.....	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	
Umea	30.00	762.1	30.06	763.4	31.8	— 0.1	83	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	
Hernosand	30.01	762.2	30.06	763.5	38.8	3.8	95	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	
Stockholm	29.89	759.2	30.07	763.7	43.2	6.2	67	E	.....	.....	2	.....	3	.....	.....	0	0	.....	
Wisby	29.92	760.0	29.98	761.5	48.2	9.0	74	E	.....	.....	4	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.00	762.1	30.08	764.0	41.5	5.3	74	SE	2.9	1.3	.....	.....	0	.....	.....	0.002	0.04	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.70	729.0	30.13	765.3	53.6	12.0	67	N	.....	.....	1	.....	1	.....	.....	0.008	0.2	Clear	The Observatory.
Zurich	28.50	724.0	30.14	765.6	54.3	12.4	72	W	.....	.....	1	.....	3	.....	.....	0.008	0.2	Bright	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +2.9 mm; Thermometer, +1.4 cent.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.95	760.6	63.1	17.3	86	N	11	5.0	.....	.....	2	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.99	761.8	77.7	25.4	.....	S	.....	.....	3	.....	2	.....	.....	.....	.....	.....	B. Stefanidès.
Valona	.....	.....	29.97	761.1	68.9	20.5	.....	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.85	758.2	29.98	761.4	67.8	19.9	80	Calm	.....	.....	0	.....	10n	.....	SW	0.19	4.8	Overcast	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.10	764.5	30	— 1.1	.....	Calm	0	0	.....	2c	0	W	.....	0	0	Fair	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.92	760.0	32	0.0	84	W	5	2.2	.....	.....	10s	.....	NW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.87	758.7	35	1.7	79	W	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.85	758.2	30.06	763.5	23.0	— 4.5	100	NE	.....	.....	1	0	Fog	.....	.....	0	0	Foggy	James Smith, M. A.
Dalhousie, N. B.	29.90	759.4	29.93	760.2	34.5	1.4	92	NW	.....	.....	2	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C.	29.87	758.7	29.92	760.0	41.1	5.1	100	Calm	.....	.....	.....	10cs	0	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	.....	.....	30.00	762.0	32	0.0	69	NW	28	10.3	.....	5k	5n	NW	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.93	760.2	30.00	762.0	28.2	— 2.1	84	NW	6	2.7	.....	0	1s	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.65	753.1	30	— 1.1	89	S	5	2.2	.....	5k	5ks	SW	SW	0	0	Cloudy	James Stewart.
Goderich, Ontario	29.22	742.2	30.03	762.7	37.3	2.9	89	SW	.....	.....	1	10k	0	SW	.....	0.064	1.63	Cloudy	H. J. Strang, M. A
Granton, Ontario	28.86	733.0	30.00	762.0	35	1.7	100	E	.....	.....	1	.....	10n	.....	.....	Inap.	Inap.	Cloudy	James Grant.
*Halifax, N. S.	29.75	755.6	29.89	759.2	32	0.0	94	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.68	753.9	30.06	763.5	37.7	3.2	74	NE	.....	.....	2	10cs	0	NE	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.55	750.6	29.57	751.1	33	0.6	85	NW	.....	.....	4	.....	10n	.....	.....	0.36	9.1	Overcast	E. Weedon.
*Kingston, Ontario	29.72	754.9	30.10	764.5	27	— 2.8	88	NE	5	2.2	.....	2c	0	Calm	.....	0	0	Clear	S. Woods, M. A
*Montreal, Quebec	29.86	758.4	30.07	763.8	28	— 2.2	71	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.36	745.7	30.09	764.3	26	— 3.3	82	NE	11	4.9	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley
Peterboro, Ontario	29.30	744.2	30.08	764.0	28.1	— 2.2	24	N	.....	.....	1	0	3ks	.....	.....	0	0	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.26	743.2	29.98	761.5	38	3.3	91	N	10	4.5	.....	.....	Haze	.....	N	0.03	0.8	Cloudy	H. Morgan.
Port Hastings, N. S.	29.80	756.9	29.85	758.2	30.4	— 0.9	.....	NW	4	1.8	.....	.....	.....	.....	.....	0	0	Dark	Peter Grant.
Port Stanley, Ontario	29.31	744.5	29.97	761.2	39	3.9	92	NE	4	1.8	.....	.....	10n	.....	NE	0.05	1.3	Cloudy	M. Payne.
*Quebec, Quebec	29.71	754.6	30.05	763.3	29	— 1.7	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.66	753.4	30.15	765.8	20	— 6.7	91	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.76	755.9	29.93	760.2	29	— 1.7	77	N	4	1.8	.....	0	0	.....	.....	0	0	.....	G. Murdock, C. E.
*Saugeen, Ontario	29.28	743.7	30.01	762.2	32	0.0	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	.....	.....	30.07	763.8	28	— 2.2	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	28.69	728.7	30.01	762.2	34.2	1.2	98	E	5	2.2	.....	.....	10	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.78	756.4	29.81	757.2	40	4.4	84	W	6	2.7	.....	2k	2ks	NW	NW	Inap.	Inap.	Fair	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.04	763.0	34	1.1	64	NE	5	2.2	.....	.....	10ks	.....	E	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	32.0	0.0	100	E	.....	.....	.....	10ks	10n	.....	.....	0.95	24.1	Raining	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.78	756.4	30.01	762.2	35	1.7	90	N	3	1.3			10s		Calm	0.24	6.1	Cloudy	
Alpena, Michigan	29.30	744.2	29.96	761.0	43	6.1	66	E	8	3.6		2ck	5ks	W	E	0	0	Fair	
Atlantic City, New Jersey	29.90	759.4	29.92	760.0	53	11.7	86	NE	28	12.5			10s		NE	0.01	0.3	Cloudy	
Augusta, Georgia	29.73	755.1	29.91	759.7	63	17.2	94	NW	3	1.3			10s		NW	0.86	21.8	Cloudy	
Baltimore, Maryland	29.92	760.0	29.97	761.2	47	8.3	85	NE	7	3.1			10s		NE	0.14	3.6	Threatening	
Barnegat, New Jersey	29.91	759.7	29.93	760.2	51	10.6	86	NE	26	11.6			10ks		NE	0.06	1.5	Cloudy	
Bismarck, Dakota	27.92	709.2	29.61	752.1	36	2.2	70	W	8	3.6		0	2s		Calm	0	0	Clear	
Boise City, Idaho	27.05	687.1	29.68	753.9	39	3.9	63	S	4	1.8			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	29.84	757.9	30.00	762.0	38	3.3	46	N	8	3.6		1cs	1s	N		0.01	0.3	Clear	
Brackettville, Texas	28.70	729.0	29.71	754.6	63	17.2	46	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.69	728.7	29.70	754.4	29	— 1.7	89	W	4	1.8		0	2ks		W	0.07	1.8	Fair	
Brownsville, Texas	29.86	758.4	29.93	760.2	64	17.8	88	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.24	742.7	29.95	760.7	40.0	4.4	100	NE	8	3.6			10s		NE	0.10	2.5	Cloudy	
Burlington, Vermont	29.78	756.4	30.05	763.3	27	— 2.8	88	N	1	0.4			10s		Calm	0	0	Cloudy	
Cairo, Illinois	29.54	750.3	29.93	760.2	52	11.1	100	S	2	0.9			Fog		Calm	0	0	Foggy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.63	676.4	30.12	765.0	41	5.0	73	NW				0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.71	754.6	29.72	754.9	61	16.1	94	NE	22	9.8			10n		NE	1.57	39.9	Light rain	
Cape Henry, Virginia	29.81	757.2	29.81	757.9	60	15.6	94	NE	30	13.4			10n		NE	1.12	28.4	Light rain	
Cape Lookout, N. Carolina	29.76	755.9	29.78	756.4	62	16.7	94	N	18	8.0			10s		NE	1.84	46.7	Cloudy	
Cape May, New Jersey	29.87	758.7	29.90	759.4	53	11.7	100	N	12	5.4			10s		NE	0.22	5.6	Threatening	
Charleston, South Carolina	29.86	758.4	29.93	760.2	64	17.8	94	W	6	2.7			10s		W	0.81	20.6	Cloudy	
Cheyenne, Wyoming	23.90	607.0	29.84	757.9	28	— 2.2	67	SW	4	1.8		5c	0	SW		0	0	Fair	
Chicago, Illinois	29.12	739.6	29.79	756.7	54	12.2	93	NE	8	3.6			Fog		Calm	0.05	1.3	Foggy	
Cincinnati, Ohio	29.21	741.9	29.84	757.9	59	15.0	88	NW	1	0.4			10s		NW	0.17	4.3	Cloudy	
Cleveland, Ohio	29.22	742.2	29.94	760.5	50	10.0	78	NE	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
Concho, Texas					52	11.1	53	S	12	5.4		0	0			0	0	Clear	
Corsicana, Texas	29.41	747.0	29.87	758.7	55	12.8	87	S	3	1.3		0	0			0	0	Clear	
Davenport, Iowa	29.15	740.4	29.78	756.4	54	12.2	93	SE	2	0.9			Fog		Calm	Inap.	Inap.	Foggy	
Denison, Texas	29.02	737.1	29.79	756.7	59	15.0	69	S	14	6.3		0	0			0	0	Clear	
Denver, Colorado	24.66	626.4	29.88	758.9	39	3.9	39	Calm	0	0			8s		Calm	0	0	Cloudy	
Detroit, Michigan	29.24	742.7	29.92	760.0	45	7.2	92	E	6	2.7			10s		NE	0.06	1.5	Cloudy	
Dodge City, Kansas	27.26	692.4	29.56	750.8	41	5.0	83	N	18	8.0		0	0			0	0	Clear	
Dubuque, Iowa	29.07	738.4	29.76	755.9	54	12.2	93	S	3	1.3			10s		Calm	0.25	6.3	Cloudy	
Duluth, Minnesota	28.87	733.3	29.53	750.0	48	8.9	92	SE	14	6.3			10n		E	0.98	24.9	Light rain	
Eagle Pass, Texas	29.09	738.9	29.83	757.7	52	11.1	60	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.87	758.7	29.94	760.5	32	0.0	69	N	12	5.4		0	0			0	0	Clear	
Erie, Pennsylvania	29.19	741.4	29.90	759.4	49	9.4	85	E	6	2.7			10s			0.12	3.0	Cloudy	
Escanaba, Michigan	29.16	740.7	29.81	757.2	46	7.8	92	SE	10	4.5			10n		SE	0.08	2.0	Light rain	
Florence, Arizona	28.25	717.5	29.85	758.2	52	11.1	59	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	23.97	608.8	29.97	761.2	42	5.6	49	Calm	0	0		0	0			0	0	Clear	
Fort Craig, New Mexico	25.41	645.4			38	3.3	81	NW	2	0.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.24	742.7	29.77	756.1	60	15.6	65	SE	13	5.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.54	724.9	29.77	756.1	61	16.1	82	S	7	3.1		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.52	724.4	29.61	752.1	51	10.6	78	Calm	0	0		0	0			0	0	Clear	
Fort Sully, Dakota	28.15	715.0	29.83	757.7	36	2.2	90	NW	2	0.9		0	0			0.04	1.0	Clear	
Galveston, Texas	29.90	759.4	29.94	760.5	65	18.3	94	S	2	0.9		0	0			0	0	Clear	
Grand Haven, Michigan	29.20	741.7	29.85	758.2	46	7.8	92	SE	8	3.6			10s		SE	0.03	0.8	Cloudy	
Indianapolis, Indiana	29.11	739.4	29.87	758.7	56	13.3	93	Calm	0	0			Fog			0.01	0.3	Foggy	
Indianola, Texas	29.89	759.2	29.92	760.0	67	19.4	90	S	3	1.3		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	29.94	760.5	29.96	761.0	68	20.0	79	W	5	2.2		0	0			0.07	1.8	Clear	
Keokuk, Iowa	29.15	740.4	29.75	755.6	52	11.1	86	S	5	2.2		2ck	1s	S	Calm	0.02	0.5	Fair	
Key West, Florida	29.92	760.0	29.96	761.0	80.5	26.9	86	Calm	0	0			8s		W	0	0	Cloudy	
Kittyhawk, North Carolina	29.79	756.7	29.82	757.4	62	16.7	94	NE	28	12.5			10s		NE	1.12	28.4	Cloudy	
Knoxville, Tennessee	28.96	735.6	29.95	760.7	58	14.4	93	SW	2	0.9			10n		SW	0.22	5.6	Light rain	
La Crosse, Wisconsin	28.96	735.6	29.67	753.6	56	13.3	79	S	14	6.3			10s		S	0	0	Cloudy	
La Mesilla, New Mexico	25.99	660.1	30.14	765.5	42	5.6	58	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas					63	17.2	83	Calm	0	0		0	0			0	0	Clear	
Leavenworth, Kansas	28.93	734.8	29.77	756.1	51	10.6	93	S	2	0.9		5k	Fog	Calm		0	0	Cloudy	
Los Angeles, California	29.53	750.0	29.86	758.4	60	15.6	81	N	3	1.3		0	5ks		N	0	0	Fair	
Louisville, Kentucky	29.33	745.0	29.88	758.9	56	13.3	93	S	3	1.3			Fog		Calm	Inap.	Inap.	Dense fog	
Lynchburg, Virginia	29.23	742.4	29.99	759.4	59	15.0	76	NE	2	0.9			10s		NE	0.41	10.4	Cloudy	
Maricopa Wells, Arizona					46	7.8	42	N				0	0			0	0	Clear	
Marquette, Michigan	29.08	738.6	29.77	756.1	45	7.2	84	SE	6	2.7			10n		Calm	0.26	6.6	Light rain	
Mason, Texas	28.24	717.3	29.97	761.2	58	14.4	59	W	4	1.8		0	0			0	0	Clear	
Memphis, Tennessee	29.64	752.8	29.95	760.7	63	11.7	93	Calm	0	0			Fog		Calm	0	0	Foggy	
Milwaukee, Wisconsin	29.16	740.7	29.84	757.9	51	10.6	93	SE	20	8.9			10s		Calm	0.04	1.0	Cloudy	
Mobile, Alabama	29.97	761.2	30.01	762.2	61	16.1	100	Calm	0	0		0	Sm'e			0.04	1.0	Clear	
Montgomery, Alabama	29.79	756.7	30.02	762.5	59	15.0	97	W	2	0.9			10s		W	0.03	0.8	Cloudy	
Morgantown, West Virginia	28.85	732.8	29.90	759.4	48	8.9	77	Calm	0	0		0	5s		SW	0.01	0.3	Fair	
Mt. Washington, N. H.	23.58	598.9	29.94	760.5	20	— 6.7	85	NW	30	13.4		0	0			0	0	Clear	
Nashville, Tennessee	29.43	747.5	29.96	761.0	53	11.7	100	Calm	0	0			Fog		Calm	0.17	4.3	Foggy	
New Haven, Connecticut	29.88	758.9	30.00	762.0	39	3.9	63	N	10	4.5			10s		Calm	0.15	3.8	Cloudy	
New London, Connecticut	29.92	760.0	29.97	761.2	39	3.9	64	N	6	2.7		8ck	0	N		0.14	3.6	Fair	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	64	17.8	89	NW	1	0.4		0	Sm'e		Calm	0.01	0.3	Clear	
Newport, Rhode Island	29.92	760.0	29.97	761.2	39	3.9	80	N	7	3.1		0	9ks		NE	0.07	1.8	Cloudy	
New York, New York	29.81	757.2	29.99	761.7	41	5.0	74	N	8	3.6			10s; fg		Calm	0.03	0.8	Cloudy	
Norfolk, Virginia	29.81	757.2	29.86	758.4	58	14.4	100	NE	8	3.6			10n		NE	2.58	65.5	Light rain	
North Platte, Nebraska	26.99	685.5	29.65	753.1	28	— 2.2	77	NW	8	3.6		0	0			Inap.	Inap.	Clear	
Olympia, Washington Ter.	29.89	759.2	29.93	760.2	39	3.9	91	S	3	1.3			10s		Calm	0.34	8.6	Cloudy	
Omaha, Nebraska	28.72	729.5	29.80	756.9	45	7.2	92	N	8	3.6			10s		Calm	0	0	Cloudy	
Oswego, New York	29.68	753.9	30.01	762.2	44	6.7	84	E	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
Pembina, Dakota	28.81	731.8	29.66	753.4	30	— 1.1	73	S	7	3.1			10s		Calm	0	0	Cloudy	
Philadelphia, Pennsylvania	29.93	760.2	29.98	761.5	41	5.0	91	NE	15	6.7			10s		NE	0.02	0.5	Cloudy	
Phœnix, Arizona					54	12.2	43	NE				0	0			0	0	Clear	
Pike's Peak, Colorado	17.60	447.0	29.81	757.2	11	—11.7	100	S	14	6.3			10n		Calm	0.04	1.0	Light snow	
Pioche, Nevada	23.84	605.5	29.61	752.1	38	3.3	54	NW	9	4.0			10s		SW	0	0	Cloudy	
Pittsburg, Pennsylvania	29.06	738.1	29.86	758.4	50	10.0	86	E	2	0.9		5k	Fog	W	Calm	Inap.	Inap.	Fair	
Port Huron, Michigan	29.28	743.7	29.95	760.7	40	4.4	91	Calm	0	0			10s		Calm	0.08	2.0	Cloudy	
Portland, Maine	29.96	761.0	30.01	762.2	34	1.1	69	N	10	4.5		1k	Fog	Calm		0	0	Clear	
Portland, Oregon	29.94	760.5	30.04	763.0	45	7.2	84	SW	2	0.9			10s		SW	0.40	10.2	Cloudy	
Prescott, Arizona	24.62	625.3	29.98	761.5	55	12.8	34	SE				0	0			0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	79	26.1	73	NW	4	1.8		8cs	0	NW		0	0	Cloudy	
Red Bluff, California	29.63	752.6	29.99	761.7	50	10.0	58	N	8	3.6		2c	0	N		0	0	Clear	
Rochester, New York	29.35	745.5	29.98	761.5	40	4.4	95	E	7	3.1			10s; fg		E; Calm	0.06	1.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.49	749.0	30.07	763.8	44	6.7	92	W	7	3.1			10n		Calm	0.27	6.9	Light rain	
Sacramento, California	29.91	759.7	29.99	761.7	45	7.2	68	NW	2	0.9		10k	0	NW		0	0	Cloudy	
St. Louis, Missouri	29.28	743.7	29.85	758.2	53	11.7	86	S	6	2.7		0	0			Inap	Inap.	Clear	
St. Marks, Florida	29.98	761.5	30.00	762.0	62	16.7	94	NW	4	1.8			10s		Calm	0.32	8.1	Cloudy	
St. Paul, Minnesota	28.79	731.3	29.60	751.8	50	10.0	93	SW	8	3.6			10s		W	0.22	5.6	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.46	646.7	29.78	756.7	38	3.3	63	N	4	1.8			10s		Calm	0.16	4.1	Cloudy	
San Antonio, Texas	29.22	742.2	29.80	756.9	57	13.9	87	NE	3	1.3		0	0			0	0	Clear	
San Diego, California	29.83	757.7	29.90	759.4	63	17.2	78	SW	6	2.7			10s		W	0	0	Cloudy	
Sandusky, Ohio	29.24	742.7	29.90	759.4	53	11.7	86	NE	14	6.3			10ks		NE	0.02	0.5	Cloudy	
Sandy Hook, New Jersey	29.95	760.7	29.97	761.2	43	6.1	83	NE	20	8.9			10ks		NE	0.13	3.3	Cloudy	
San Francisco, California	29.97	761.2	30.04	763.0	54	12.2	43	NW	12	5.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.17	588.5	29.71	754.6	38	3.3	71	E	8	3.6		0	Haze			0	0	Clear	
Savannah, Georgia	29.85	758.2	29.95	760.7	66	18.9	84	NW	3	1.3			10s		NW	0.76	19.3	Clearing	
Shreveport, Louisiana	29.73	755.1	29.95	760.7	55	12.8	93	Calm	0	0		0	0			0	0	Clear	
Smithville, North Carolina	29.84	757.9	29.88	758.9	62	16.7	100	NW	5	2.2			10s		NW	2.10	53.3	Cloudy	
Springfield, Massachusetts	29.82	757.4	29.95	760.7	40	4.4	56	N	3	1.3			10ks		N	0.06	1.5	Cloudy	
Stanwix, Arizona																			
Stockton, Texas	26.83	681.5	29.83	757.7	52	11.1	59	SW	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	29.94	760.5	30.00	762.0	39	3.9	63	NE	16	7.2		8k	0	NE		0	0	Fair	
Toledo, Ohio	29.24	742.7	29.92	760.0	48	8.9	92	N	12	5.4			10s		N	0.21	5.3	Cloudy	
Tucson, Arizona	27.42	696.5	29.97	761.2	53	11.7	68	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	29.90	759.4	29.93	760.2	65	18.3	90	NW	6	2.7			10ks		NW	0.66	16.8	Cloudy	
Umatilla, Oregon	29.60	751.8			36	2.2	80	SW	4	1.8		2c	0	Calm		0	0	Clear	
Vicksburg, Mississippi	29.75	755.6	30.01	762.2	57	13.9	93	S	4	1.8		0	Fog		Calm	0.02	0.5	Clear	
Virginia City, Montana	24.06	611.1	29.54	750.3	23	—5.0	73	Calm	0	0			10s		Calm	0	0	Cloudy	
Visalia, California	29.61	752.1	29.99	761.7	47	8.3	69	Calm	0	0		2k	0	NW		0	0	Clear	
Washington, D. C.	29.86	758.4	29.96	761.0	47	8.3	100	NE	6	2.7			10s; fg		NE	0.10	2.5	Cloudy	
Wickenburg, Arizona					39	3.9	26	S				0	0			0	0	Clear	
Wilmington, N. Carolina	29.79	756.7	29.87	758.7	62	16.7	88	NW	12	5.4			10ks		NW	1.40	35.6	Cloudy	
Winnemucca, Nevada	25.53	648.4	29.89	759.2	16	—8.9	66	SW	8	3.6		2c	0	SW		0	0	Clear	
Wood's Holl, Mass	29.91	759.7	29.97	761.2	44	6.7	67	NE	3	1.3		5c	2s	SW	NE	0.10	2.5	Fair	
Yankton, Dakota	28.56	725.4	29.86	758.4	39	3.9	91	W	2	0.9		0	Fog		Calm	Inap.	Inap.	Foggy	
Yuma, Arizona	29.62	752.3	29.78	756.4	58	14.4	35	Calm	0	0		5cs	0	W		0	0	Fair	
SUB-SERIES.																			
York Factory, B. A.	29.40	746.7	29.46	748.3	35.5	1.9	100	SE	10	4.5			10s					Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.90	759.4	29.92	760.0	81	27.2	87	Calm	0	0		8c	0	SW		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.12	765.0	30.13	765.3	81	27.2	82	Calm	0	0		5c	2s	SE		0	0		James Gall.
Navassa, W. I.	29.87	758.7	29.95	760.7	81	27.2		E	4	1.8						0.07	1.8	Cloudy	F. M Everett.
St. Thomas, W. I.					86	30.0	71	E	2	0.9		0	2ks			0.03	0.8	Clear	G. O. Gellich.
Paramaribo, D. Guiana, S. A.			29.98	761.5	84	28.9	68	SE			2	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			65.0	18.3	85	Calm			0		10s; ks			0.03	0.8	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.: Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.: Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.02	762.5	48	8.9	45	7.2	76	NW	7	3.1			2cs			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.10	764.5			66	18.9	89	N	1	0.4			1			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.02	762.5	71	21.7	28	— 2.2	??	NNE			1		0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.94	760.5	55.5	13.1	49	9.4	57	NW			3		0			0	0			Clear	
Adams. Montevideo, Uruguay	29.66	753.4	70	21.1	69	20.6	85	N			5		10		W	Light	Light	None		D. clouds	
Alert. Off Oki Islands	30.34†	770.6†	57	13.9	56	13.3	81	NE			1		6		N			Long	W	D. clouds	
Alliance, Constantinople, Turkey.	30.15	765.8	66	18.9	65	18.3	73	NE			1		3		N&E					Pleasant	
Ashuelot. Tientsin, China	30.29	769.4	59	15.0	46	7.8	40	SSW			1		0					Smooth		Blue sky	
Canonicus, New Orleans, La	29.99	761.7	49	9.4	64	17.8	89	SE			1		1							Clear	
Colorado, New York, N. Y	30.06	763.5	63	17.2	42	5.6	66	N	15	6.7			10		N	0.05	1.3			Overcast	
Despatch, Constantinople, Turkey.	30.05	763.3	66	18.9	64	17.8	73	NE			1–3		3		Calm					Clear	
Franklin, Norfolk, Va	29.96	761.0	60	15 6	59	15.0	100	NNE	10	4.5			3		NNE	1.	25.			Rainy	
Gettysburg, Catania, Italy	29.75‡	755.6‡			75	23.9	100	N			1–2		3		Calm	0	0			D. clouds	
Kearsarge, Aden, Arabia	29.98	761.5			86	30.0	76	S			1		3					Smooth		D clouds	
Lackawana, Port Townsend, W. T.	29.97	761.2			43	6.1	93	SE			1–2		9		W			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.90	759.4	68	20.0	67	19.4	64	WSW			0		10		Calm	Light	Light	Smooth		Drizzling	
Michigan, Detroit, Michigan	29.41	747.0	54.	12.2	49	9.4	85	ENE			6		10		ENE					Cloudy	
Monocacy, Yokohama, Japan	29.93	760.2	55	12.8	53	11.7	54	N			3		1			0	0	Smooth		D. clouds	
Monongahela, Gibraltar, Spain	30.24	768.1	72	22.2	72	22.2	76	SSW			2		cs					Smooth		D. clouds	
New Hampshire, Port Royal, S.C	30.09	764.3			69	20.6	80	NE	6	2.7			10			0.09	2.3			Raining	
Omaha, S. 31° 25′, W. 72° 50′	30.13	765.3	63	17.2	60.5	15.8	88	NNW	19	8.5			10		N	0	0	Moderate.	N	Cloudy	
Onward, Callao, Peru	30.04†	763.0†	71	21.7	68	20.0	84	SE			2		9					Long	W	D. clouds	
Ossipee, New York, N. Y	30.02	762.5	67	19.4	43	6.1	75	NE			3		10		NE					Overcast	
Palos, Shanghai, China	30.43	772.9	58	14.4	53	11.7	80	Calm			0		1		Calm					Clear	
Pensacola, Mare Island, Cal	30.08	764.0			55	12.8	80	N&W			1–2		0			0	0			Clear	
Plymouth, Norfolk, Va	30.15†	765.8†	68	20.0	64	17.8	100	NNE			1		10							Drizzling	
Ranger, Shanghai, China	30.47	773.9			61	16.1	82	Calm			0		5		Calm					Pleasant	
Rio Bravo, Brownsville, Texas	29.82	757.4			65	18.3	94	SSW			1									Misty	
Santee, Annapolis, Md	29.99	761.7	49	9.4	48	8.9	92	NE			1		10		SW	0	0			Overcast	
St. Louis, League Island, Pa	29.88	758.9	50	10.0	52	11.1	??	NE	11	4.9			10		NE	0.05	1.3			Overcast	
Swatara, N. 37° 15′, W. 75° 37′	29.85	758.2			61	16.1	91	NE			8		10		N&E			Rough	N&E	Raining	
Tennessee, Yokohama, Japan	30.03	762.7	62	16.7	56	13.3	75	NNW	13	5.8			3			0	0	Smooth		D. clouds	
Trenton, Villefranche, France	30.12†	765.0†	68	20.0	65	18.3	78	SW	4	1.8			1		S&E	0	0			D. clouds	
Vandalia, Villefranche, France	30.08	764.0	67	19.4	66	18.9	50	SSW			1		2		SE					D. clouds	
Wabash, Boston, Mass	29.97	761.2	44	6.7	42	5.6	27	N	8	3.6			2		NW	0	0			D. clouds	
Wyoming, Washington, D. C	30.24†	768.1†			55	12.8		NE			2		10							Drizzling	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ——————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 27° 18′, E. 123° 42′			30.46*	773.7*	66	18.9	64	NE			1		2		NE	Long	NE	D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Glendell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.																			
S. S. Belgic, N. 35° 2′, W. 138° 35′			30.40†	772.1†				NE			4		Heavy		N	Moderate.	NNW		Capt. John Metcalf.
S. S. Gaelic, N. 43° 43′, W. 145° 03′			30.43*	772.9*	55	12.8	??	SSE			5		kn		SE	Long	SE	Squally	Capt. W. H. Kidley.
S. S. Oceanic, N. 22° 20′, E. 115° 8′			30.01	762.2	65	18.3	89	NE			4–5		6		NE	Light	NE	D. clouds	Capt. H. Parsell.
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 48° 47′, W. 23° 42′	N81E	10.5	29.90	759.4	57.5	14.2	76	SSW			5		3ck		SW	dough		Blue sky	Capt. K. Undütsch.
S. S. Nürnberg, N. 36° 58′, W. 76° 9′			29.86	758.4	64.5	18.1	76	N			3		s		N	Light	N	Drizzling	Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known. *Aneriod.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.	Character	Direction from—		
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—				
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 40° 53′, W. 67° 34′			30.15*	765.8*	44	6.7	??	N			7		4		NNW	Light	NNW	Cloudy	Captain Sargent.
S. S. Ohio. Philadelphia, Pa			30.04	763.0	48	8.9	78	N			1		10		N			Gloomy	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.68†	753.9†	66	18.9	94	W			3		2		W			Clear	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 44° 30′, W. 53° 01′			29.72*	754.9*	40	4.4		NW	20	8.9			5		NW	Heavy	NNE	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

* Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Sandy Hook, N. J.			29.86	758.4	51	10.6	79	NE	15	6.7			10ks		NE			Overcast	Capt. James Jorgensen.

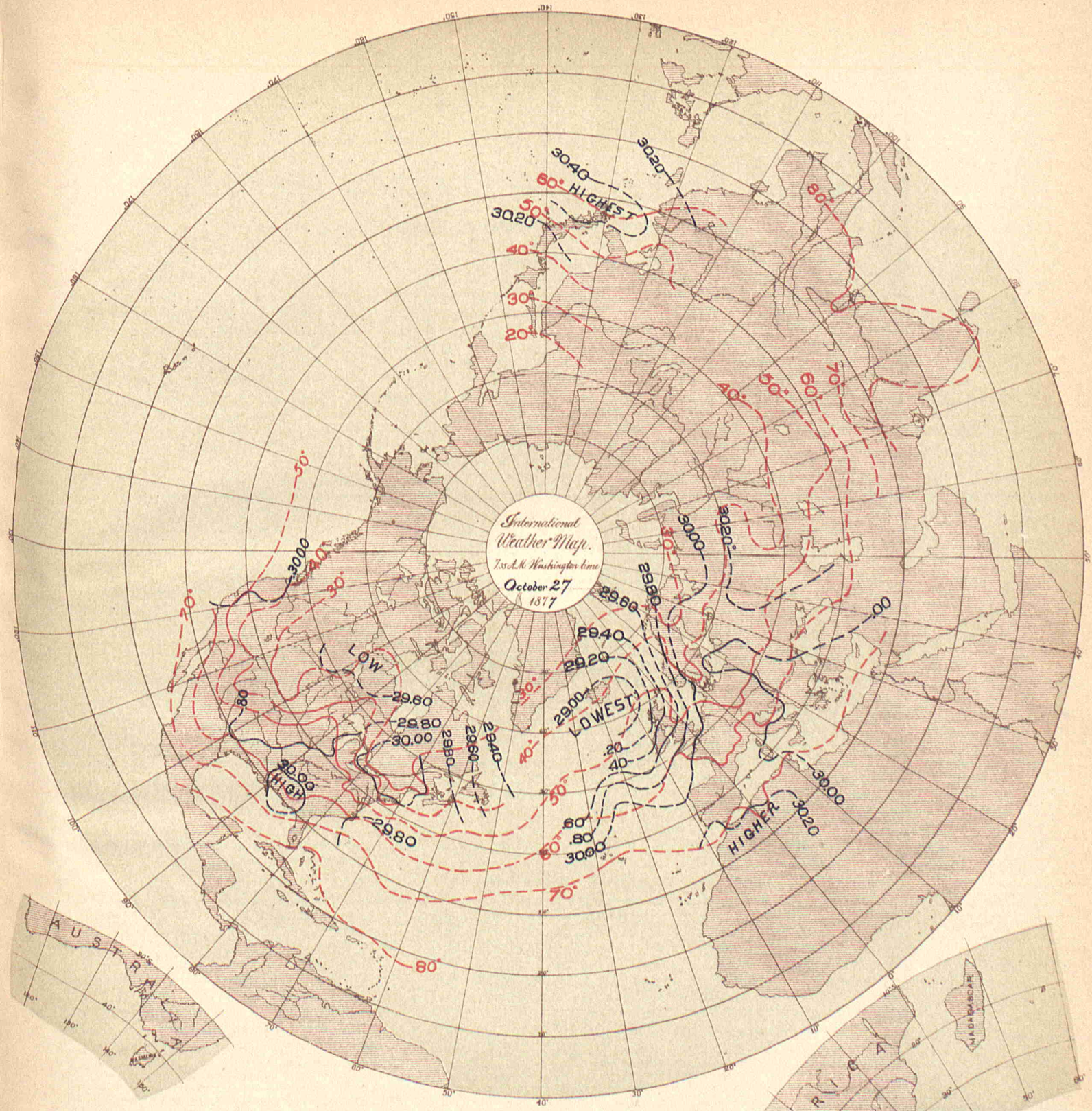
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 28, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.24	768.2	73.4	23.0	66	Calm			0		1			0	0	Very fair	Michel.
Algiers			30.17	766.2	69.4	20.8	80	N			1		2			0	0	Fair	Peter.
La Calle			30.19	766.7	69.1	20.6	76	NW			3		4			0.079	2.0	Cloudy	Fleury.
Tunis			30.17	766.4	70.0	21.1	49	NW			4		5			0	0	Cloudy	Jacques.
Sfax			30.20	767.1	71.6	22.0		NW			3		8			0	0	Very cloudy	Husson.
Saida			30.26	768.5	70.9	21.6	34	NE			1		1			0	0	Very fair	Millot.
Tebessa			30.17	766.4				WSW			2		4			0	0	Cloudy	Bourgeois.
Geriville			30.24	768.2	63.7	17.6	43	N			3		1			0	0	Very fair	Lemaillot.
Laghouat			30.25	768.3	69.8	21.0	49	W			2		2			0	0	Fair	François.
Biskra			30.24	768.1	79.5	26.4	33	NNW			1		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.59	751.5	30.14	765.6	52.9	11.6	65	SW			2		8			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.39	746.6	30.18	766.5	48.2	9.0	66	W			2		10			0	0		Dr. Wierzbiski.
Eperies	29.22	742.1	30.11	764.8	48.4	9.1	65	N			1		9c			0	0		Julius Mikolik.
Gratz	28.87	733.4	30.14	765.6	50.7	10.4	64	S			2		0			0	0		Andreas Rospini.
Hermannstadt	28.61	726.8	30.04	762.9	54.0	12.2	58	Calm			0		6			0	0		Prof. Reissenberger.
Kremsmünster	28.79	731.3	30.17	766.2	44.6	7.0	85	Calm			0		8			0	0		Prof. C. Wagner.
Lemberg	29.11	739.4	30.12	765.0	46.8	8.2	89	NW			1		10			0.020	0.5		Dr. T. Stanecki.
Pola	29.96	760.9	30.07	763.8	59.2	15.1	49	NNW			1		9cs			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.80	756.8	30.08	764.0	48.2	9.0	95	N			1		10			0.167	4.25		Karl Stancel.
Trieste	30.00	762.0	30.10	764.6	59.7	15.4	65	E			2		2			0	0	Clear	P. Busin.
Vienna	29.46	748.3	30.17	766.2	52.7	11.5	57	NNW			1		0			0	0		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.66	728.0	30.19	766.7	50.4	10.2	77	WSW			2		7			0.004	0.1		Prof. M. Passau.
Brussels	29.91	759.8	30.12	765.0	54.5	12.5	71	SW			3		5		W	0	0		Royal Observatory.
Furnes	30.08	764.1	30.11	764.7	55.6	13.1	77	SW			2		3			0	0		M. E. de Cae.
Maeseyck	29.98	761.4	30.11	764.7	53.8	12.1	81	WSW			4		8			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer.
Aberdeen	29.76	755.9	29.86	758.4	51.4	10.8		SW	8	3.6			3			0.330	8.38	Blue sky	W. Boswell.
Ardrossan																			William McNeil.
Armagh, Observatory			30.00	762.0	51.6	10.9		SSW	7	3.1									S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.03	762.7	53.7	12.1		WSW	23	10.3			1					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.01	762.2	53.9	12.2		SSE			1		8					D. clouds	J. Dreyer.
Bradford, Yorkshire																0.14	3.6		J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	79	26.1		NE			1		6					Overcast	Pvt. G. W. Roberts, A
Cambridge, Observatory			30.09	764.3	58.0	14.4		WNW			1		1					D. clouds	H. Todd. [H. C.
Cardington			30.09	764.3	55.0	12.8		NW			1		1					Blue sky	John McLaren.
Chatham, School M. E.	30.00	762.0	30.13	765.3	57.7	14.3		SW			1		5					Hazy	Lt. Col. C.M.Martin, R.E.
Dartmoor	28.18	715.8	29.63	752.6	52.0	11.1		W			2		3					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.93	760.2	29.96	761.0	52	11.1		WSW			3		3					D. clouds	J. Mac Gowan.
Dover	30.10	764.5	30.13	765.3	55	12.8		W			3		0					Clear	J. Costello.
Eccles, (near Manchester)			30.02	762.5	53.9	12.2		SW	6.0	2.7			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.95	760.7	30.18	766.6	56.5	13.6		SW			2		7					Overcast	The Staff.
Fort Napier, (Natal)	27.27	692.6	29.47	748.5	79.6	26.4		NW			4		9					Overcast	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)			29.91	759.7	88	31.1		Calm			0		3					D. clouds	
Galway, Queen's College					53	11.7		W			2		1					D. clouds	S. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.17	766.3	30.21	767.3	68.0	20.0		E			3		4					D. clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.70	754.4	29.90	759.4	51.9	11.1		WSW			3		6					D. clouds	D. G. Maclean.
Great Yarmouth	30.02	762.5	30.02	762.5	54	12.2		WNW			3		2					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.95	760.7	30.12	765.0	55.3	12.9		WNW			1		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.96	761.0	30.18	766.6	57.5	14.2		WSW			2		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.15	765.8	58	14.4		SW			6		2			0	0	D. clouds	M. P. Moyle.
Holyhead	30.01	762.2	30.06	763.5	54	12.2		SW			2		2					Blue sky	John Tilston.
Jersey	29.94	760.5	30.23	767.8	58.0	14.4		W			4		7			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory			30.12	765.0	56.0	13.3		W	11	4.9			6					Hazy	The Staff.
Kingstown	30.01	762.2	30.04	763.0	54	12.2		W			3		6					D. clouds	George Mitchell.
Leicester, Museum			30.06	763.5	55.0	12.8		NW			1		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.94	760.5	30.01	762.2	69.0	20.6		NW			2		6					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.70	754.4	29.80	756.9	50	10.0		NW			2		8					¾ clouded	W. D. Penney.
Nassau, (Bahamas)			30.04	763.0	80.5	26.9		NE			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.88	758.9	30.07	763.8	57.3	14.1		WNW			3		2c;k;ks		WSW; WNW]	0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.54	750.3	30.06	763.5	57.5	14.2		W			3		7					D. clouds	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			30.11	764.8	56	13.3		W			2		5					D. clouds	F. Lucas
Plymouth	30.08	764.0	30.16	766.1	57.0	13.9		W			1		2					D. cloud-	John Merrifield.
Roche's Point	29.98	761.5	30.03	762.7	54	12.2		SW			3		10					Overcast	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			29.68	753.9	49.8	9.9		SW	20	8.9			3					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.88	758.9	63.6	17.6		NE			2		9			Blank	Blank	Threatening	Sergt. W. H. Lyne.
Sheffield	29.78	756.4	30.02	762.5	55.0	12.8		W			3		4			0.18	4.6	Blue sky	W. F. Cooper.
Silloth Rectory	29.92	760.0	29.95	760.7	56.5	13.6	75	SW			1		0			0.355	9.02	Blue sky	Rev. F. Redford, M. A.
Stonyhurst, Observatory					52.2	11.2		SW			4		7					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.77	756.1	47	8.3		WNW			2		5					D. clouds	John Smith.
Stratfield Turgiss	29.91	759.7	30.13	765.3	56.4	13.2		W			1		5					D. clouds	Rev. C.H. Griffith, F.M.S.
Thurso			29.71	754.6	51	10.6		WSW			3		4					D. clouds	John Trotter.
Truro, Royal Institution			30.16	766.1	60	15.6		S			4		5					D. clouds	W. Newcombe.
Valencia, Observatory			29.44	747.8	56.2	13.4		SSE	30	13.4			8					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		SW			6		0			0	0		Henry Mercer.
Cape Good Hope, Obs'y	30.02	762.5	30.06	763.5	68.8	20.4	56	SSE	31	13.9		1	4						The Staff, for E.J. Stone.
Hobart Town, (Tasmania)			29.28	743.7	51.5	10.8	94	NW			2		10n					Raining	Francis Abbott, F.R.A.S
Leith, Restalrig Park			29.91	759.7	53.0	11.7		W			3		8k			0.22	5.6	Fine; cloudy	Andrew Gibb.
Mauritius, Observatory	29.89	759.2	30.08	764.0	77.4	25.2	62	ESE	15.0	6.7		0	4		ESE	0.21	5.3	Fine	C. Meldrum.
Melbourne, Observatory	29.62	752.3	29.71	754.6	56.0	13.3	56	W	14	6.3			4			0	0	Cloudy	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.73	755.1	52	11.1		WNW			4	5	5	SW		0.2	5.		J. Youngclause.
North Unst, (Shetland Is.)			29.60	751.8	50	10.0		WSW			4	2	5	W					Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series: 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Direction from—		
S. S. Algeria, Queenstown, Ireland			30.02	762.5	56	13.3		SSW			3		9			*0		D. clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 48° 10′, W. 32° 5′			29.01	736.8				WSW			8					9	Cross	Showery	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato.
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			30.05	763.3	56	13.3		SSW			3		10					Hazy	Capt. Alex Simpson.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.21	665.7			68.4	20.2	91	E			1	2ck	2ck		E				Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.97	761.1	30.01	762.2	45.3	7.4	80	SE			4		8						
Fanöe	29.89	759.2	29.91	759.7	51.4	10.8	94	SW			2		7						
Godthaab, (Greenland)	29.53	750.1	29.57	751.2	22.8	—5.1	68	NNE			6		0						
Stykkisholm, (Iceland)	28.90	734.1	28.95	735.2	34.0	1.1	81	NE			6		5						
Thorshavn, (Faröe)	29.58	751.3	29.61	752.2	45.7	7.6	74	WNW			2		3						
Vestervig	29.69	754.1	29.86	758.4	45.3	7.4	98	SE			2		10					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.75	755.6	30.30	769.6	55.4	13	78	NW			1		10		NW	0	0	Covered	Collignon, Director.
Amiens, Normal School	30.07	763.6	30.17	766.4	55.4	13.0	90	SW			2		0			0.071	1.8	Clear	Bonvarne, Director.
Avignon, Normal School	30.11	764.9	30.19	766.9	65.3	17.5	49	N			6		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.67	753.5	30.24	768.0	55.6	13.1	72	N			1		8		W	0.130	3.3	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.08	764.1	30.24	768.2	57.0	13.9	64	SW	2.9	1.3					SW	0.012	0.3		Albert Cheux.
Beauvais	29.92	755.9	30.21	767.2	56.3	13.5	75	W			1		8		W	0.08	2.	Very cloudy	Normal School.
Besançon	29.36	745.7	30.27	768.8	50.0	10	86	S			2		8		SW	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.38	746.3	30.31	769.9	53.6	12.1	78	SE			4		5ck		E	0	0	Cloudy	Normal School.
Bourges, Normal School	29.70	754.3	30.25	768.4	55.8	13.2	81	WSW			2		5		WNW	0.04	1.	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.94	760.5	30.16	766.1	61.0	16.1	81	SW			4		5k		SW	0.108	2.75		The Staff.
Carcassonne, Normal School	29.88	758.9	30.29	769.4	63.7	17.6	50	W			2		1		W	0	0	Clear	Vateau, Director.
Caen	30.09	764.2	30.19	766.7	57.9	14.4	84	E			1		1		E	0.311	7.9	Clear	Normal School.
Chartres, Normal School	29.59	751.5	30.15	765.8	59.0	15	89	W			1		8		NE	0	0		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.89	759.1	30.21	767.3	56.3	13.5	80	SW			3		5k		SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.75	730.3	30.23	767.7	56.8	13.8	69	NE			1		0			0.012	0.3	Clear	Alluard, Director.
Commercy, Normal School	29.33	744.9	30.21	767.4	52.7	11.5	73	WSW			2		5ck;n		WSW	0.063	1.6	Cloudy	Dr. Goulet, Director.
Commune de Grésasque*	29.04	737.6	30.18	766.6	59.0	15.0	53	NW			2		2		NW	0	0	¾ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.06	763.4	30.27	768.8	60.4	15.8	71	S			1		5		W	0.020	0.5	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.94	760.5	30.25	768.4	55.6	13.1	77	W			2		2		W	0.063	1.6	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.35	745.4	30.28	769.2	49.8	9.9	96	SW			1		10			0.220	5.60	Raining	Pin, Director.
Lorient, Naval Observatory	30.17	766.3	30.27	768.9	58.6	14.8	82	SSE			2		8		S	0	0	¾ covered	T. Carré, Director.
Mâcon, Normal School	29.58	751.2	30.24	768.0	50.4	10.2	95	Calm			0		0			0.031	0.8	Clear	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.16	740.7	30.22	767.5	52.2	11.2	83	W			1		5		E	0.08	2.	Cloudy	Normal School.
Nismes, Normal School	29.95	760.6	30.15	765.7	59.4	15.2	81	W			4		0			0	0	Clear	Boyer, Director.
Orleans, Normal School	29.81	757.1	30.26	768.7	57.6	14.2	69	W			2		5		W	0	0	Cloudy	Bernard, Director.
Paris, Observatory	29.98	761.4	30.22	767.6	55.4	13.0	74	W			1		9k		W	0.096	2.45	Almost cov'd	National Observatory.
Privas	29.17	740.8	30.24	768.1	56.3	13.5	50	N			4		2		N	0	0	Slightly cl'dy	Normal School
Rochefort, Naval Obs'y	30.24	768.2	30.28	769.0	62.6	17.0	80	SW			2		10		SW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.12	765.0	30.21	767.2	57.7	14.3	72	SSW			2		2		W	0.098	2.5	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.17	740.9	30.24	768.2	60.8	16	81	W			1		2		W	0	0	Slightly cl'dy	T. Hugues, Director.
Villefranche	29.95	760.8	30.28	769.1	53.8	12.1	80	SE			1		10		Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	82.4	28										0.08	2.		L'Abbé Marchésl.
Marseilles, Observatory			30.13	765.2	61.3	16.3	45	NW			3		0			0	0	Clear	The Staff.
Mont-Louis	25.06	636.6	30.38	771.6	48.9	9.4	36	ESE	7.4	3.33			0			0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.93	760.2	30.21	767.2	55.4	13.0	77	W			2		8		NW	0.098	2.5		Marié Davy, Director.
Perpignan			30.26	768.6	62.6	17.0	45	NE	9.3	4.17			0			0	0		Dr. Flues.
Pic du Midi, (Plantade,) H. P.	21.44	544.6			36.5	2.5		NW			2		1					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.74	577.6			46.4	8.0		NW			2		1			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.05	763.3	30.22	767.5	56.3	13.5	74	W			1		8			0.134	3.4	Fair	E. Renou.
Toulouse, Observatory	29.61	752.0	30.34	770.5	60.1	15.6	56	NNW			1		2			0	0		The Staff.
Tours	30.06	763.4	30.25	768.4	57.2	14.0	71	W			1		5		N	0.067	1.7		C. Marquet.
Versailles, (near Paris)			30.22	767.5	56.5	13.6	73	W			1		9			0.121	3.08	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.28	769.0	30.30	769.6	46.9	8.3	87	ESE	7.4	3.3			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Grésasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,364 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.90	759.4	30.07	763.8	49.6	9.8	77	S			1		10			0	0		Prof. Arndt.
Breslau	29.63	752.6	30.17	766.2	48.9	9.4	48	S			2		0			0	0		Royal University Obs'y.
Carlsruhe	29.76	755.9	30.20	767.0	49.6	9.8	89	S			1		10			0.138	3.5		Albert Senz.
Cassel	29.53	750.0	30.14	765.5	53.2	11.8	82	SSW			2		3	SW		0.028	0.72		Dr. H. Möhl.
Crefeld	29.91	759.8	30.08	763.9	55.2	12.9	73	W			2		6k			0.08	2.		Director Lose.
Emden	30.02	762.4	30.05	763.3	52.0	11.1	88	NW			3		2			0.035	0.9		Prof. Prestel.
Frankfort on the Main	29.83	757.6	30.19	766.9	54.3	12.5	58	SSW			1		5			0.075	1.9		Physical Society.
Friedrichshafen	28.80	731.5	30.26	768.5	49.6	9.8	84	WSW					10	W		0.075	1.9		M. Wilhelm.
Hamburg	29.95	760.6	30.02	762.4	47.8	8.8	98	SW			2		10			0.094	2.4	Raining	Captain F. Hegemann.
Kiel	29.97	761.2	29.98	761.6	47.8	8.8	80	SSW			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.99	761.7	30.06	763.5	47.1	8.4	93	NW										Cloudy	Prof. E. Luther.
Köslin			30.09	764.3	45.5	7.5		SE			2		0			0.185	4.7		H. Müller.
Leipsic, Observatory	29.71	754.5	30.13	765.3	51.4	10.8	68	SW			2		10	WSW		0	0		Prof. Bruhns.
Memel, Naval School	30.02	762.6	30.07	763.8	46.6	8.1	92	Calm			0		10n						Reinbrecht von Skalweit.
Neufahrwasser	30.12	765.0	30.13	765.4	48.2	9.0	70	NNW			2		10	N		0	0		A. Lothes.
Posen	29.90	759.4	30.20	767.1	47.3	8.5	66	WSW			3–4		2			0	0	Clear.	Dr. Magener.
Strassburg Obs., (in Alsace	29.67	753.6	30.23	767.7	53.2	11.8	77	SW			1		9	W		0.125	3.17		Dr. Schur.
Stuttgart	29.21	741.8	30.16	766.0	50.0	10.0	87	W			1		10	W		0.118	3.0	Raining	Prof. Schoder.
Treves, (Trier)	29.52	749.8	30.04	763.1	55.4	13.0	65	W			5		5			0.125	3.18	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.65	727.8	30.19	766.9	46.4	8.0	81	W			2		10s		SW			Light rain	Dr. Von Bebber.
Wustrow, Naval School	30.05	763.3	30.09	764.3	45.3	7.4	86	ESE			2		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.51	749.5	29.90	759.4	62.2	16.8		NE										Cloudy	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.93	760.3	29.98	761.6	82.9	28.3	55	SW	18.0?	8.0?			1			0	0	D. clouds	
Deesa	29.56	750.7	30.03	762.8	85.8	29.9	31	Calm					0			0	0	Blue sky	
Bombay	29.90	759.5	29.94	760.5	84.2	25.0	68	WNW	12.0	5.4			10		W	0	0	Overcast	
Poona	27.95	709.9	29.96	760.9	79.0	26.1	67	ENE					4		E	0	0	D. clouds	
Lahore	29.28	743.6	30.02	762.6	80.4	26.9	38	Calm	0.8	0.4			10			0	0	Cloudy	
Belgaum	27.42	696.6	30.00	761.9	71.4	21.9	88	E	2.0	0.9			8	E	E	0.13	3.3	D. clouds	
Bangalore																			
Roorkee	29.11	739.3	30.01	762.3	77.8	25.4	41	Calm	1.8	0.8						0	0		
Agra	29.43	747.4	30.00	761.9	80.7	27.1	42	N								0	0		
Trichinopoly																			
Nagpur	28.95	735.2	30.01	762.1	74.6	23.7	49	Calm	3.1	1.4			6			0	0		
Madras																			
Lucknow	29.63	752.6	30.01	762.2	77.3	25.2	53	Calm	1.0	0.4						0	0	Blue sky	
Allahabad	29.68	753.8	29.99	761.8	76.2	24.6	55	Calm	0.5	0.2			0			0	0	Blue sky	
Patna	29.81	757.2	29.99	761.8	77.1	25.1	61	SSE	1.0	0.4			6	SE	SE	0	0	D. clouds	
Hazaribagh	27.97	710.4	30.01	762.3	72.8	22.7	52	W	2.9	1.3			1			0	0		
Cuttack	29.90	759.4	29.98	761.5	80.0	26.7	66	NE	0.3	0.1			2			0	0	D. clouds	
Calcutta (Alipore)	29.94	760.6	29.97	761.2	77.9	25.5	78	N	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.58	751.4	29.98	761.4	80.9	27.2	67	NW	1.1	0.5			0			0	0	Blue sky	
Chittagong	29.91	759.8	30.01	762.2	79.4	26.3	80	Calm	5.0	2.2			2			0	0	Blue sky	
Sibsagar	29.67	753.5	30.01	762.2	76.9	24.9	86	E	0.8	0.4			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.63	727.2	30.01	762.3	76.0	24.4	50	W	1.6	0.7			2	E		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.24	564.8	30.11	764.9	32.2	0.1	61	NW			6		6	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.22	564.5	30.16	766.0	29.3	— 1.5		NNW			1		8	S		0	0		Signora Ernesta Manfredi.
Udine	29.68	753.9	30.10	764.5	57.0	13.9	68	Calm	0	0			7			0	0		Prof. Giovanni Clodig.
Padua	29.98	761.6	30.10	764.4	56.8	13.8	68	ENE	0	0			3	W		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.98	761.5	30.18	766.5	58.1	14.5	68	S	5.6	2.5			3	W		0	0		Conte Alm. Da Schio.
Verona	29.84	758.0	30.07	763.7	63.3	17.4	75	SSE	0	0			3			0	0		Dott. B. Bertoncelli.
Bergamo	28.78	731.0	30.11	764.7	56.1	13.4	67	S			2		7			0	0		Prof. Trionfini Carlo.
Domodossola	29.07	738.4	30.11	764.9	56.3	13.5	57	S			4		3			0	0		Prof. Giuseppe Calza
Milan	29.63	752.7	30.16	766.1	56.8	13.8		W			1		2			0	0		Ab. Gio. Capelli.
Pavia	29.78	756.3	30.13	765.2	53.6	12.0	83	SW			1		0			0	0		Prof. Gio. Cantoni.
Moncalieri	29.22	742.1	30.14	765.6	56.3	13.5	72	SE	1.3	0.6			2			0	0		Prof. P. F. Denza.
Mondovi	28.19	716.1	30.13	765.2	54.9	12.7	58	NNW			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.91	759.6	30.13	765.3	63.5	17.5	67	ESE			2		3			0	0		Prof. L. Vassallo.
Genoa	29.93	760.2	30.10	764.5	64.4	18.0	55	SW	2.5	1.1			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.87	758.7	30.13	765.2	56.1	13.4	75	SW	5.6	2.5			4	NW		0	0		Dott. G. Manzi.
Parma	29.79	756.6	30.12	765.1	58.6	14.8	70	NW			4		2			0	0		Prof. P. Pigorini.
Florence	29.86	758.4	30.12	765.0	59.4	15.2	64	WNW			2		1			0	0		Cav. F. Meucci.
Leghorn	30.03	762.8	30.12	765.0	63.0	17.2	73	SW	1.8	0.8			3	NE		0	0		Prof. P. Monte.
Siena	28.89	733.7	30.14	765.6	59.4	15.2	37	NW	0	0			3	N		0	0		Prof. L. Toscani.
Urbino	28.55	725.1	30.12	765.1	54.9	12.7	63	NE			2		5			0	0		Prof. P. Serpieri.
Pesaro	30.07	763.8	30.12	765.1	56.1	13.4	86	N	32.2	14.4			5			0	0		Prof. Luigi Guidi.
Ancona	29.98	761.5	30.09	764.2	58.3	14.6	63	NW			6		4	NW		0.016	0.4		Prof. F. DeBosis.
Grosseto	30.01	762.2	30.12	765.1	64.0	17.8	52	NE			2		4	SE		0	0		Avv. P. Ponticelli.
Rome	29.89	759.1	30.07	763.6	64.0	17.8	48	NNW	11.9	5.3			2			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.85	758.1	30.05	763.2	66.2	19.0	41	NE			2		4	E		0	0		Prof. L. Palmieri.
Lecce					59.7	15.4	84	NNW	12.5	5.6			7	N		0.764	19.4		Prof. C. De Giorgi.
Cosenza	29.12	739.7	30.02	762.4	64.2	17.9	77	NE	1.3	0.6			4			0.055	1.4		Prof. F. D. Conti.
Cagliari	29.86	758.4	30.05	763.2	66.2	19.0		NW			2		0			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.85	758.2	29.90	759.4	68.9	20.5	45	N			4		5	S		0.076	1.9		Prof. F. Cafiero.
Palermo	29.76	755.9	30.02	762.4	63.9	17.7	64	W	4.3	1.9			6			0.201	5.1		Prof. G. Cacciatore.
Caltanissetta	28.04	712.2	29.98	761.4	59.2	15.1	65	NW			6		8			0	0		Prof. A. Pagani.
Syracuse	29.80	756.8	29.87	758.7	65.1	18.4	62	W			2		8	NW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.50	749.4	30.06	763.5	63.3	17.4	44	SW	0	0			1			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.9 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.1 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.8 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.17	766.3	30.28	769.0	50	10.0	62									0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.10	686.7	30.13	765.3	54.0	12.2	79	NW	0.2	0.11		0	18			0	0	Clear	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,299 m., or 7,542.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.13	765.2	30.13	765.2	55.4	13.0		WSW			4					0.213	5.4		
Groningen	29.95	760.8	30.01	762.2	52.0	11.1		W			3					0.031	0.8		
Helder	30.01	762.3	30.01	762.3	52.9	11.6		WSW			4					0	0		
Hellevoetsluis			30.07	763.8	53.2	11.8	83	W			4								
Utrecht	30.03	762.8	30.08	764.0	56.3	13.5	80	WSW			4		5			0.244	6.2	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis, force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.71	754.5	29.76	755.9	47.1	8.4	89	S	18.1	8.1			5			0.276	7.0	Raining	
Bröno	29.80	756.8	29.84	757.8	43.2	6.2	53	SE	9	4			8			0	0		
Christiania	29.87	758.7	30.02	762.5	39.9	4.4	76	ENE	11	5			9			0	0		
Tromsö	29.81	757.2	29.85	758.3	35.8	2.1	62	SW	18	8			5			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.78	756.4	29.97	761.2	69.4	20.8	92	SSW	15.0	6.7			10			0.079	2.0		Dr. J. A. Sampaio
Campo Major	29.24	742.8	30.25	768.3	70.7	21.5	57	Calm	0	0			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.13	765.2	30.20	767.0	74.7	23.7	64	ESE	4.9	2.2			8			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.92	759.9	30.27	768.9	64.8	18.2	86	E	9.8	4.4			5	N		0	0		The Staff.
Ponta Delgada, (Azores)	30.01	762.3	30.08	764.1	70.9	21.6	87	SW	10.5	4.7			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

NAVAL SERIES. VESSELS.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
S. S. India.				A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.72	755.0	30.16	766.0	45.7	7.6	88	W	4	2			10						Astronomical Obs.
Wilna	29.68	753.9	30.11	764.7	46.9	8.4	88	SSE	2	1			10						Astronomical Obs.
Dorpat	29.91	759.7	30.16	766.1	43.9	6.6	93	ESE	7	3			10						Prof. Dr. Weihrauch
St. Petersburg	30.19	766.8	30.21	767.2	44.1	6.7	91	ESE	7	3			10						Central Physical Obs.
Kuopio	29.96	760.9	30.29	769.3	31.5	— 0.3	92	NE	7	3			10						Ch. Forsten.
Kieff	29.48	748.8	30.12	765.1	46.8	8.2	92	N	4	2			10					Foggy	Physical Cabinet.
Nikolaiev	30.07	763.6	30.13	765.4	52.2	11.2	71	NNE	9	4			10						Kurdakof.
Kertch	30.02	762.5	30.04	763.0	60.4	15.8	81	NNE	7	3			5						Lagorio.
Moscow	29.76	755.8	30.32	770.2	42.3	5.7	96	S	7	3			10						Meteorological Obs.
Lugan	29.93	760.2	30.14	765.5	43.9	6.6	91	ESE	13	6			10						Meteorological Obs.
Archangel	30.43	772.9	30.45	773.4	29.8	— 1.2	92	Calm	0	0			10						Ogorodnikof.
Tiflis	28.73	729.8	30.15	765.8	57.6	14.2	70	E	9	4			7						Physical Observatory.
Astrakhan	30.29	769.3	30.21	767.2	54.9	12.7	70	E	4	2			9						Sebastianof.
Kasan	30.13	765.4	30.41	772.5	46.0	7.8	68	Calm	0	0			1						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.37	746.1	30.35	770.9	39.7	4.3	54	WSW	7	3			5						Meteorological Obs.
Nukuss	29.95	760.6	30.18	766.5	56.1	13.4	38	NE	4	2			1						
Kasaly																			Bobrof.
Tashkend	28.59	726.2	30.33	770.3	50.0	10.0	79	Calm	0	0			1					Foggy	Michelson.
Barnaul	29.73	755.2	30.28	769.1	38.7	3.7	73	Calm	0	0			10						Meteorological Obs.
Yeniseisk	29.84	757.8	29.98	761.5	32.5	0.3	94	W	2	1			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.90	759.4	30.04	763.0	50.2	10.1	48	Calm	0	0			3						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor																			

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.: Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.04	712.1	30.24	768.1	65.8	18.8	54	SE	3.7	1.67		1	0	SW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir
SUB-SERIES.																			
Havana, Cuba, W. I.	29.95	760.7	30.03	762.8	78.2	25.7	87	Calm	0	0		1c	1ks	NW		0	0	Clear.	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.12	765.0	30.22	767.5	73.0	22.8	60	W	8.1	3.6		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.			29.88	758.9	84.2	29.0	77	SE				3k	1k	SE	SE	0.669	17.00	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published: wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.27	768.9	30.31	769.9	30.2	— 1.0	.....	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	
Umea	30.18	766.6	30.23	767.9	34.5	1.4	82	S	.....	.....	2	.....	0	.....	.....	0	0	.....	
Hernosand	30.14	765.5	30.19	766.8	37.4	3.0	93	SSE	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	29.96	760.9	30.13	765.4	40.6	4.8	65	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	
Wisby	30.00	761.9	30.06	763.4	45.0	7.2	69	ENE	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.07	763.7	30.14	765.6	39.6	4.2	74	ESE	4.0	1.8	.....	.....	0	.....	.....	0.606	0.15	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.83	732.2	30.25	768.4	54.7	12.6	53	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.60	726.3	30.24	768.2	50.7	10.4	74	W	.....	.....	1	.....	10	.....	.....	0.039	1.0	Raining	The Observatory.

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.1 mm; Thermometer, +2.1 cent.; Relative Humidity, —21 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.94	760.4	62.4	16.9	84	NE	17	7.5	.....	.....	10	.....	NE	0.276	7.0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	30.01	762.2	63.9	17.7	.....	S	.....	.....	1	.....	10	.....	.....	Blank	Blank	.....	B. Stefanidès.
Valona	.....	.....	29.98	761.4	59.5	15.3	.....	W	.....	.....	1	.....	10	.....	.....	2.17	55.	Covered	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.97	761.3	81.1	27.3	68	W	.....	.....	1	.....	5ks	.....	S	0.12	3.0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	30.13	765.3	34	1.1	.....	Calm	0	0	.....	.....	8s	.....	NE	0	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.04	763.0	33	0.6	80	NW	8	3.6	.....	2k	2ks	NW	NW	0	0	Fair	W. R. Bigg.
*Chatham, N. B	.....	.....	29.98	761.5	37	2.8	84	NW	8	3.6	.....	.....	8ks	.....	Calm	0.180	4.57	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.93	760.2	30.13	765.3	28.7	— 1.8	94	NE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.90	759.4	.....	.....	34.6	1.4	78	W	.....	.....	2	.....	.....	.....	.....	0	0	Gloomy	James Smith, M. A.
Dalhousie, N. B	30.28	769.1	30.33	770.4	37.1	2.8	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	H. A. Johnson.
Esquimault, B. C	.....	.....	30.12	765.0	32	0.0	87	N	12	5.4	.....	0	5s	.....	W	0	0	Clear.	W. H. Bevis.
*Father Point, Quebec	30.03	762.7	30.10	764.5	38.0	3.3	82	NW	8	3.6	.....	0	1s	.....	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B	.....	.....	29.92	760.0	22	— 5.6	97	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Stewart.
Goderich, Ontario	28.92	734.6	30.03	762.7	45	7.2	100	SE	.....	.....	1	.....	10n	.....	.....	0.10	2.5	Foggy	H. J. Strang, M. A.
Granton, Ontario	29.86	758.4	29.99	761.7	37	2.8	81	NW	6	2.7	.....	.....	8ks	.....	NW	0	0	Fair	James Grant.
*Halifax, N. S	29.74	755.4	30.11	764.8	46.5	8.1	83	E	.....	.....	1	10cs	.....	E	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.66	753.4	29.69	754.1	35	1.7	90	NW	.....	.....	3	.....	3k	.....	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F	29.81	757.2	30.19	766.8	35	1.7	82	NE	3	1.3	.....	10cs	0	Calm	.....	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.87	758.7	29.92	760.0	36.0	2.2	100	N	6	2.7	.....	.....	10n	.....	.....	0.11	2.8	Squally	S. Woods, M. A.
Little Glace Bay, N. S	29.95	760.7	30.16	766.1	27	— 2.8	96	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	C. H. Rigby.
*Montreal, Quebec	29.32	744.7	30.03	762.7	39	3.9	86	SE	8	3.6	.....	8k	2ks	SE	SE	0.03	0.8	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.32	744.7	30.10	764.5	38.2	3.4	67	SE	.....	.....	1	.....	10s	.....	.....	0	0	Overcast	Rev. R. Mosley
Peterboro, Ontario	29.34	745.2	30.04	763.0	43	6.1	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. Morgan.
Port Hastings, N. S	29.36	745.7	30.01	762.2	48	8.9	97	E	2	0.9	.....	.....	10n	.....	W	0.01	0.3	Cloudy	Peter Grant.
Port Stanley, Ontario	29.83	757.7	30.17	766.3	32	0.0	90	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear.	M. Payne.
*Quebec, Quebec	29.63	752.6	30.11	764.8	35	1.7	74	E	8	3.6	.....	10cs	0	W	.....	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.90	759.4	30.07	763.8	29	— 1.7	83	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.	W. H. McIntyre.
St. John, N. B	29.28	743.7	29.99	761.7	46	7.8	96	S	6	2.7	.....	.....	10ks	.....	SW	0.19	4.8	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	K. Stewart.
Stayner, Ontario	28.76	730.5	30.06	763.5	44.4	4.7	99	Calm	0	0	.....	.....	10	.....	.....	0.319	8.10	Foggy	R. J. Cole.
Stratford, Ontario	29.89	759.2	29.91	759.7	38	3.3	72	NW	6	2.7	.....	.....	10n	.....	.....	0.04	1.0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.68	753.9	30.07	763.8	42	5.6	88	NE	4	1.8	.....	.....	10n	.....	E	0.03	0.8	Cloudy	T. C. Hill.
*Toronto, Ontario	29.93	760.2	30.02	762.5	34.2	1.2	71	SW	2	0.9	.....	0	.....	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	35.5	1.9	95	SW	.....	.....	.....	10ks	10ns	.....	.....	Blank	Blank	Cloudy	John Delany

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.16	766.1	35	1.7	90	NW	3	1.3			10ks		Calm	0	0	Cloudy	
Alpena, Michigan	29.30	744.2	29.96	761.0	43	6.1	91	Calm	0	0			10s		SW	0.41	10.4	Cloudy	
Atlantic City, New Jersey	30.17	766.3	30.19	766.8	51	10.6	86	Calm	0	0		10cs	0	Calm		0	0	Cloudy	
Augusta, Georgia	30.00	762.0	30.19	766.8	58	14.4	88	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Baltimore, Maryland	30.13	765.3	30.18	766.6	53	11.7	93	SW	3	1.3			10n		SW	Inap.	Inap.	Light rain	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	50	10.0	96	W	7	3.1			10s			0	0	Cloudy	
Bismarck, Dakota	28.19	716.0	29.93	760.2	28	— 2.2	88	W	2	0.9			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.14	689.3	29.86	758.4	27	— 2.8	88	Calm	0	0		0	8s		W	Inap	Inap.	Fair	
Boston, Massachusetts	29.99	761.7	30.15	765.8	34	1.1	61	NW	6	2.7		1cs	Haze	W		0	0	Clear	
Brackettville, Texas	28.64	727.4	29.63	752.6	71	21.7	71	SE	8	3.6			10s		SE	0	0	Cloudy	
Breckenridge, Minnesota	28.92	734.6	29.95	760.7	30	— 1.1	89	NW	6	2.7			10k		Calm	0	0	Cloudy	
Brownsville, Texas	29.77	756.1	29.84	757.9	75	23.9	90	S	8	3.6		0	0			0	0	Clear	
Buffalo, New York	29.31	744.5	30.02	762.5	46.6	7.8	100	NE	3	1.3		5k	Fog	W	Calm	0.02	0.5	Fair	
Burlington, Vermont	29.91	759.7	30.18	766.6	33	0.6	79	Calm	0	0		0	0			0	0	Clear	
Cairo, Illinois	29.59	751.6	29.98	761.5	59	15.0	87	S	9	4.0		0	0			0	0	Clear	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.58	675.1	30.06	763.5	38	3.3	54	W				0	Haze			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.15	765.8	30.16	766.1	61	16.1	70	NE	12	5.4		2k	0	NE		Inap.	Inap.	Fair	
Cape Henry, Virginia	30.16	766.1	30.19	766.8	55	12.8	86	NW	4	1.8		0	5s			0.01	0.3	Fair	
Cape Lookout, N. Carolina	30.20	767.1	30.22	767.6	61	16.1	82	NE	10	4.5		0	0			0	0	Clear	
Cape May, New Jersey	30.15	765.8	30.18	766.6	55	12.8	79	W	10	4.5			10s		W	0	0	Cloudy	
Charleston, South Carolina	30.14	765.5	30.20	767.1	62	16.7	83	N	6	2.7		0	0			Inap.	Inap.	Clear	
Cheyenne, Wyoming	23.82	605.0	29.76	755.9	17	— 8.3	100	N	8	3.6			Fog		Calm	0.30	7.6	Foggy	
Chicago, Illinois	29.20	741.7	29.87	758.7	55	12.8	80	E	12	5.4			10s		Calm	0	0	Cloudy	
Cincinnati, Ohio	29.37	746.0	30.02	762.5	50	10.0	93	SE	2	0.9		2cs	Fog	Calm	Calm	0	0	Clear	
Cleveland, Ohio	29.33	745.0	30.05	763.3	52	11.1	82	ESE	7	3.1			10s		SW	0	0	Cloudy	
Concho, Texas					63	17.2	72	S	12	5.4		0	0			0	0	Clear	
Corsicana, Texas	29.39	746.5	29.85	758.2	60	15.6	94	S	3	1.3			10s		S	0	0	Cloudy	
Davenport, Iowa	29.19	741.4	29.81	757.2	52	11.1	72	E	14	6.3			10s		E	0.02	0.5	Cloudy	
Denison, Texas	29.04	737.6	29.82	757.4	64	17.8	88	SW	20	8.9			10ks		SW	0	0	Cloudy	
Denver, Colorado	24.60	624.8	29.82	757.4	35	1.7	70	Calm	0	0			10s		Calm	0.35	8.9	Cloudy	
Detroit, Michigan	29.31	744.5	29.98	761.5	47	8.3	92	S	2	0.9		5cs	Fog	SW	Calm	0.03	0.8	Fair	
Dodge City, Kansas	27.11	688.6	29.37	746.0	43	6.1	83	NW	26	11.6		0	8s		NW	0	0	Cloudy	
Dubuque, Iowa	29.16	740.7	29.85	758.2	47	8.3	85	E	9	4.0			10s		Calm	0.12	3.0	Cloudy	
Duluth, Minnesota	29.14	740.1	29.83	757.7	40	4.4	73	N	12	5.4			10s		Calm	0.04	1.0	Cloudy	
Eagle Pass, Texas	29.00	736.6	29.71	754.6	69	20.6	84	SW	14	6.3			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.00	762.0	30.08	764.0	32	0.0	79	NW	11	4.9		0	0			0	0	Clear	
Erie, Pennsylvania	29.30	744.2	30.00	762.0	54	12.2	93	S	8	3.6		5k	0			0	0	Fair	
Escanaba, Michigan	29.24	742.7	29.90	759.4	40	4.4	82	W	5	2.2		2c	2s	W	W	0.56	14.2	Fair	
Florence, Arizona	28.24	717.3	29.84	757.9	50	10.0	64	W				2c	0	W		0	0	Fair	
Fort Bayard, New Mexico	23.91	607.3	29.91	759.7	46	7.8	69	SW	8	3.6		0	0			0	0	Clear	
Fort Craig, New Mexico	25.32	643.1			50	10.0	45	SW	8	3.6		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.24	742.7	29.76	755.9	61	16.1	77	S	14	6.3		2cs	2s	Calm	S	0	0	Fair	
Fort Griffin, Texas	28.51	724.1	29.79	756.7	60	15.6	70	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.53	724.6	29.61	752.1	54	12.2	93	S	6	2.7		2cs	0	Calm		0	0	Clear	
Fort Sully, Dakota	28.30	718.8	29.99	761.7	37	2.8	80	NW	3	1.3			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.87	758.7	29.91	759.7	70	21.1	90	S	4	1.8		1k	0	Calm		0	0	Clear	
Grand Haven, Michigan	29.29	744.0	29.94	760.5	46	7.8	96	E	3	1.3			10s		SW	0.05	1.3	Cloudy	
Indianapolis, Indiana	29.19	741.4	29.96	761.0	54	12.2	93	S	4	1.8		2cs	Sm'e	Calm		0	0	Clear	
Indianola, Texas	29.85	758.2	29.87	758.7	72	22.2	90	SE	2	0.9		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.11	764.8	30.13	765.3	64	17.8	89	NE	4	1.8		0	0			0	0	Clear	
Keokuk, Iowa	29.13	739.9	29.73	755.1	52	11.1	86	E	8	3.6		4k	0	Calm		0	0	Fair	
Key West, Florida	29.99	761.7	30.02	762.5	81.0	27.2	76	E	9	4.0		8cs	2ks	SW	E	Inap.	Inap.	Cloudy	
Kittyhawk, North Carolina	30.21	767.3	30.23	767.8	55	12.8	100	NE	2	0.9		1cs	0	NE		0	0	Clear	
Knoxville, Tennessee	29.14	740.1	30.16	766.1	48	8.9	92	Calm	0	0			Fog		Calm	Inap	Inap.	Dense fog	
La Crosse, Wisconsin	29.13	739.9	29.86	758.4	47	8.3	60	NE	1	0.4		10c	0	Calm		0	0	Cloudy	
La Mesilla, New Mexico	25.92	658.4	30.07	763.8	48	8.9	56	NE	1	0.4		0	0			0	0	Clear	
Laredo, Texas					71	21.7	95	SE	6	2.7		0	Haze		Calm	0	0	Threatening	
Leavenworth, Kansas	28.75	730.2	29.56	750.8	58	14.4	76	S	6	2.7		Haze	8cs		Calm	0	0	Cloudy	
Los Angeles, California	29.52	749.8	29.85	758.2	54	12.2	53	NE	7	3.1		0	0			0	0	Clear	
Louisville, Kentucky	29.45	748.0	30.00	762.0	55	12.8	86	SE	4	1.8		0	Fog		Calm	0	0	Clear	
Lynchburg, Virginia	29.51	749.5	30.19	766.8	55	12.8	74	Calm	0	0			10s		NW	0	0	Cloudy	
Maricopa Wells, Arizona					45	7.2	24									0	0	Clear	
Marquette, Michigan	29.05	737.9	29.85	758.2	42	5.6	65	S	10	4.5		5ck	0	SW		0.52	13.2	Fair	
Mason, Texas	28.19	716.0	29.89	759.2	64	17.8	83	SE	8	3.6		0	2s			0	0	Clear	
Memphis, Tennessee	29.69	754.1	30.01	762.2	59	15.0	87	S	4	1.8		0	Sm'e			0	0	Clear	
Milwaukee, Wisconsin	29.25	742.9	29.94	760.5	48	8.9	77	N	4	1.8			10s		SW	0.06	1.5	Cloudy	
Mobile, Alabama	30.04	763.0	30.08	764.0	64.5	18.1	97	N	4	1.8		0	5s		SW	0	0	Fair	
Montgomery, Alabama	29.89	759.2	30.13	765.3	54	12.2	90	Calm	0	0		0	Fog		Calm	0	0	Clear	
Morgantown, West Virginia	29.07	738.4	30.13	765.3	49	9.4	85	Calm	0	0		0	Fog			Inap.	Inap.	Foggy	
Mt. Washington, N. H.	28.71	602.2	30.07	763.8	18	— 7.8	84	NW	36	16.1		2c	0	NW		0	0	Clear	
Nashville, Tennessee	29.54	750.3	30.08	764.0	52	11.1	93	Calm	0	0		2ck	0	Calm		0	0	Clear	
New Haven, Connecticut	30.05	763.3	30.17	766.3	41	5.0	72	NW	5	2.2			10s		NW	0	0	Cloudy	
New London, Connecticut	30.14	765.5	30.19	766.8	40	4.4	73	NW	4	1.8		2ck	1s	NW	Calm	0	0	Fair	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	65	18.3	94	E	5	2.2		9k	Fog	SW	Calm	0	0	Cloudy	
Newport, Rhode Island	30.11	764.8	30.16	766.1	40	4.4	65	NW	4	1.8		5k	0	NW		0	0	Fair	
New York, New York	30.00	762.0	30.18	766.6	48	8.9	77	W	3	1.3			10s		W	0	0	Cloudy	
Norfolk, Virginia	30.18	766.6	30.24	768.1	52	11.1	100	Calm	0	0			Fog		Calm	0.02	0.5	Foggy	
North Platte, Nebraska	28.89	683.0	29.49	749.0	32	0.0	94	NE	24	10.7			10n		NE	0.32	8.1	Light snow	
Olympia, Washington Ter.	30.25	768.3	30.29	769.4	37	2.8	95	S	1	0.4			Fog		Calm	0.01	0.3	Foggy	
Omaha, Nebraska	28.54	724.9	29.60	751.8	50	10.0	64	NE	13	5.8			10s		NE	0	0	Cloudy	
Oswego, New York	29.78	756.4	30.11	764.8	46	7.8	69	SE	8	3.6			10s		Calm	0	0	Cloudy	
Pembina, Dakota	29.11	739.4	29.98	761.5	25	— 3.9	88	W	6	2.7		0	0			0.08	2.0	Clear	
Philadelphia, Pennsylvania	30.16	766.1	30.21	767.3	50	10.0	93	W	4	1.8			10s		E	0	0	Cloudy	
Phœnix, Arizona					50	10.0	44	E				0	0			0	0	Clear	
Pike's Peak, Colorado	17.44	443.0	29.65	753.1	0	—17.8	100	SW	4	1.8			10n		SW	0.28	7.1	Light snow	
Pioche, Nevada	23.86	606.0	29.62	752.3	28	— 2.2	43	N	7	3.1		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.26	743.2	30.08	764.0	46	7.8	92	Calm	0	0			Fog		Calm	0	0	Foggy	
Port Huron, Michigan	29.31	744.5	29.97	761.2	51	10.6	93	Calm	0	0			Fog		Calm	0	0	Dense fog	
Portland, Maine	30.08	764.0	30.13	765.3	37	2.8	71	Calm	0	0		2k;cs	Fog	NW		0	0	Fair	
Portland, Oregon	30.23	767.8	30.33	770.4	40	4.4	91	E	1	0.4			10s		Calm	0.06	1.5	Cloudy	
Prescott, Arizona	24.59	624.6	29.95	760.7	50	10.0	13	SE				0	0			0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	73	22.8	76	NE	8	3.6		5cs	0	Calm		0	0	Fair	
Red Bluff, California	29.72	754.9	30.09	764.3	44	6.7	60	N	8	3.6		0	0			0	0	Clear	
Rochester, New York	29.44	747.8	30.06	763.5	44	6.7	92	SE	3	1.3			10n;fg		W; Calm	0.02	0.5	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.68	753.9	30.28	769.1	36	2.2	95	Calm	0	0		5ck	0	N		0.07	1.8	Fair	
Sacramento, California	29.96	761.0	30.01	763.0	46	7.8	61	NW	8	3.6		0	0			0	0	Clear.	
St. Louis, Missouri	29.29	744.0	29.85	758.2	57	13.9	81	S	12	5.4		2c	Sm'c	Calm		0	0	Clear	
St. Marks, Florida	30.10	764.5	30.12	765.0	60	15.6	97	NE	4	1.8		0	8s		SE	0	0	Fair	
St. Paul, Minnesota	29.01	736.8	29.83	757.7	46	7.8	61	W	1	0.4			10s		Calm	0	0	Cloudy	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.44	646.2	29.77	756.1	33	0.6	89	Calm	0	0			10s		Calm	0.75	19.1	Cloudy	
San Antonio, Texas	29.15	740.4	29.71	754.6	68	20.0	95	SE	1	0.4			Haze		SE	0	0	Cloudy	
San Diego, California	29.83	757.7	29.90	759.4	56	13.3	80	E	6	2.7		0	0			0	0	Clear	
Sandusky, Ohio	29.34	745.2	30.00	762.0	55	12.8	87	S	8	3.6		5cs	Haze	Calm	Calm	0.01	0.3	Fair	
Sandy Hook, New Jersey	30.15	765.8	30.18	766.6	51	10.6	78	SW	6	2.7			10ks		S	0	0	Cloudy	
San Francisco, California	30.01	762.2	30.08	764.0	51	10.6	52	NW	12	5.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.07	586.0	29.61	752.1	35	1.7	52	E	4	1.8		0	Haze			0	0	Hazy	
Savannah, Georgia	30.08	764.0	30.18	766.6	62	16.7	94	N	3	1.3		0	0			0	0	Clear	
Shreveport, Louisiana	29.74	755.4	29.96	761.0	60	15.6	94	S	3	1.3		0	0			0	0	Clear	
Smithville, North Carolina	30.19	766.8	30.22	767.6	59	15.0	100	N	8	3.6		0	1ks		N	0	0	Clear	
Springfield, Massachusetts	29.98	761.5	30.12	765.0	34	1.1	79	NW	1	0.4		0	Sm'c			0	0	Clear	
Stanwix, Arizona					48	8.9	54	NW				0	0			0	0	Clear	
Stockton, Texas	26.77	680.0	29.77	756.1	49	9.4	71	S	8	3.6		0	0			0	0	Clear	
Thatcher's Island, Mass	30.08	764.0	30.14	765.5	40	4.4	73	NW	8	3.6		1k	0	NW		0	0	Clear	
Toledo, Ohio	29.30	744.2	29.96	761.0	55	12 8	87	Calm	0	0		5c	0	Calm		0	0	Fair	
Tucson, Arizona	27.39	695.7	29.94	760.5	51	10.6	64	Calm				0	0			0	0	Clear.	
Tybee Island, Georgia	30.14	765.5	30.18	766.6	66	18.9	90	NE	12	5.4		1k	0	Calm		0	0	Clear	
Umatilla, Oregon	29.91	759.7			37	2.8	70	NW	8	3.6		0	0			0	0	Clear	
Vicksburg, Mississippi	29.78	756.4	30.04	763.0	58	14.4	87	SE	8	3.6		0	0			0	0	Clear	
Virginia City, Montana	24.15	613.4	29 63	752.6	22	--5.6	85	NE	24	10.7			10s		NE	Inap.	Inap.	Cloudy	
Visalia, California	29.64	752.8	30.02	762.5	43	6.1	83	N	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.08	764.0	30.18	766.6	55	12.8	93	SW	6	2.7			10n		SW	Inap.	Inap.	Light rain	
Wickenburg, Arizona					37	2.8	30	SW				0	0			0	0	Clear	
Wilmington, N. Carolina	30.14	765.5	30.22	767.6	56	13.3	87	NE	4	1.8		0	Fog		Calm	0	0	Clear	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	30	—1.1	78	S	6	2.7		10k	0	NW		0.01	0.3	Cloudy	
Wood's Holl, Mass	30.10	764.5	30.16	766.1	44	6.7	76	NE	2	0.9		0	0			0	0	Clear	
Yankton, Dakota	28.63	727.2	29.94	760.5	37	2.8	90	NE	17	7.6			10n		Calm	0.40	10.2	Light rain	
Yuma, Arizona	29.69	754.1	29.86	758.4	57	13.9	40	NE	2	0.9		0	0			0	0	Clear.	
SUB-SERIES.																			
York Factory, B. A.	29.73	755.1	29.78	756.4	30.5	—0.8	95	NW	11	4.9		3k	6s	W	W	0.05	1.3	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.95	760.7	29.97	761.2	80	26.7	86	Calm	0	0		8c	0	NW		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	80	26.7	82	Calm	0	0		8c	8n	NE		0.09	2.3		James Gall.
Navassa, W. I.	29.86	758.4	29.94	760.5	83.5	28.6		E	2	0.9						0	0	Clear.	F. M Everett.
St. Thomas, W. I.					82	27.8	83	E	5	2.2		2c	2k	E		0.04	1.0		G. O. Gellich.
Paramaribo, D. Guiana, S. A.			29.96	761.0	83	28.3	71	E			2	4k	5ks	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.20	640.1			67.0	19.4	84	Calm			0		10s;ks			0.52	13.2	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.: Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573,4 m.; Dodge City, 2,486 ft., or 757.5 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.: Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.: Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.06	763.5	48	8.9	48	8.9	57	Calm	0	0			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.20	767.1			72	22.2	90	NE	3	1.3			7			0	0			D. clouds	
Navy Yard, Portsmouth, N.H	30.17	766.3	57	13.9	31	— 0.6	79	Calm	0	0						0	0			Clear	
Naval Hospital, Yokohama, Japan	30.15	765.8	58	14.4	50	10.0	72	Calm			0		0			0	0			Clear	
Adams. Montevideo, Uruguay	29.78	756 4	66	18.9	64	17.8	78	SSE			2		4		S	0	0	Light	S	D. clouds	
Alert. N. 35° 25′, E. 131° 40′	30 32†	770 1†	61	16.1	61	16.1	71	SW			3		1		SW			Long	SW	D. clouds	
Alliance, Constantinople, Turkey.	30.02	762.5	65	18.3	63	17.2	83	NNE			2		10		N&E					Overcast	
Ashuelot. Tientsin, China	30.16	766.1	58	14.4	48	8.9	43	SW			1		9		Calm			Smooth		D. clouds	
Canonicus, New Orleans, La	30.01	762.2	48	8.9	64	17.8	94	ESE			1		6		S					Partly cl'dy.	
Colorado, New York, N. Y.	30.26	768.6	71	21 7	50	10.0	79	Calm	0	0			10		NW	0	0			Foggy	
Despatch, Constantinople, Turkey.	30.32	770.1	63	17.2	63	17.2	89	NE			3–4		10		NE					Squally	
Franklin, Norfolk, Va.	30.30	769.6	53	11.7	54	12.2	93	W	2.4	1.1			0		W	0	0			Foggy	
Gettysburg, Catania, Italy.	29.87‡	758.7‡			70	21.1	90	SE			1–2		9			Blank	Blank			D. clouds	
Kearsarge, N 14° E. 42° 44′	29.96	761.0			87	30.6	72	SW			2–3		1		S	0	0	Smooth		D. clouds	
Lackawana, Port Townsend, W. T.	30.30	769.6			43	6.1	92	NW			1		9		W			Smooth		Blue sky	
Marion, Smyrna, Turkey	29.90	759.4	69	20.6	68	20.0	95	SW			2		8		Calm			Smooth		Drizzling	
Michigan, Detroit, Michigan	29.49	749.0	57	13.9	50	10.0	86	Calm			0		2		SSW					Fair	
Monocacy, Yokohama, Japan	30.16	766.1	55	12.8	50	10.0	93	Calm			0		3		N&W	0	0	Smooth		D. clouds	
Monongahela, Gibraltar, Spain	30.30	769.6	68	20.0	67	19.4	89	N&W			1		ck					Smooth		D. clouds	
New Hampshire, Port Royal, S.C.	30.34	770.6			64	17.8	94	NNE	10	4.5			1		NW	0	0			D. clouds	
Omaha, S. 29° 40′, W. 74° 00′	30.20	767.1	64	17.8	62	16.7	83	S	10	4.5			3		S	0.02	0.5	Slight	SW	Pleasant	
Onward, Callao, Peru	30.06†	763.5†	71	21.7	67.5	19.7	87	SE			1		6					Long	W	D. clouds	
Ossinee, New York, N. Y.	30.20	767.1	66	18.9	51	10.6	86	WSW			1		10		SW					Misty	
Palos, Shanghai, China	30.36	771.1	62	16.7	52	11.1	93	E			1–2		0							Clear	
Pensacola, Mare Island, Cal.	30.13	765.3			49	9.4	78	Calm			0		0			0	0			Clear	
Plymouth, Norfolk, Va.	30.49†	774.4†	60	15.6	55	12.8	93	Calm			0									Foggy	
Ranger, Shanghai, China	30.40	772.1			61	16.1	72	Calm			0		0		Calm					Pleasant	
Rio Bravo, Brownsville, Texas	29.74	755.4			75	23.9	95	SSE			1		3		S					Hazy	
Santee, Annapolis, Md.	30.29	769.4	59	15.0	56	13.3	87	SW			2		10			0	0			Overcast	
St. Louis, League Island, Pa	30.08	764.0	51	10.6	51	10.6	93	NW	4	1.8			10		NW	0.01	0.3			Overcast	
Swatara, Hampton Roads, Va.	30.24	768 1			58	14.4	88	SW			1		10		S&W					D. clouds	
Tennessee, Yokohama, Japan	30.19	766.8	62	16.7	52	11.1	79	NNW	6	2.7			1			0	0	Short	S&W	D. clouds	
Trenton, Villefranche, France	30.16	766.1	68	20.0	66	18.9	68	SE	8	3.6			1		S&E					D. clouds	
Vandalia, Villefranche, France	30.14	765.5	64	17.8	64	17.8	73	SSW			1		2		SSW					D. clouds	
Wabash, Boston, Mass.	30.16	766.1	51	10.6	36	2.2	61	NNW	5	2.2			4		Calm	0	0			Hazy	
Wyoming, Washington, D. C.	30.37†	771.4†	59	15.0	55	12.8		S			2		10							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 28° 58′, E. 127° 51′			30.45*	773.4*	65	18.3	73	NE			3		2		NE	Small	NE	D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 31° 45′, W. 143° 46′			30.10†	764.5†				Var.			6		Heavy		SE	Short	SE	Squally	Capt. John Metcalf.
S. S. Gaelic, N. 42° 38′, W. 140° 10′			30.27*	768.8*	60	15.6	82	SSE			6		kn		SE	Short	SE	Squally	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 15′, W. 16° 55′	N84E	10.8	29.61	752.1	59.0	15.0	100	S			6		Fog			Rough		Rain & mist.	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Delaware River			30.30*	769.6*	52	11.1	.79	W			6		6		W			Cloudy	Captain Sargent.
S. S. Ohio. Philadelphia, Pa			30.23	767.8	52	11.1	86	W			1		10					Overcast	Captain Morrison.
S. S. Pennsylvania, Liverpool			30.09†	764.3†	66	18.9	100	NW			4		0					Clear	Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 46° 03′, W. 47° 03′			29.73*	755.1*	37	2.8		NNW	15	6.7			4		NNE	Heavy	NNE	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Sandy Hook, N. J.			30.17	766.3	52	11.1	86	WSW	5	2.2			10s		SW			Overcast	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

* Aneroid; regulated to standard at Antwerp.

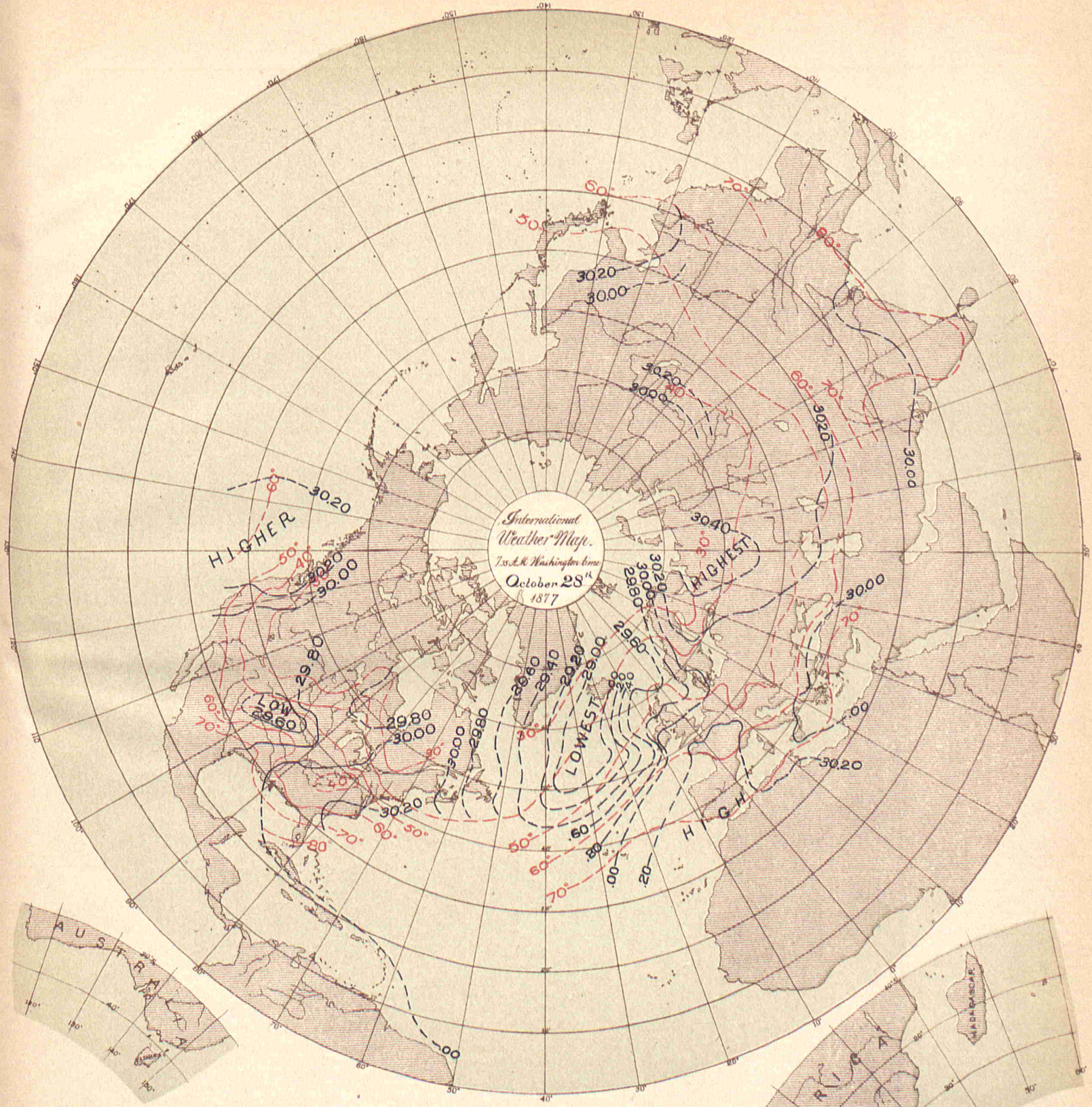
NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 29, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.24	768.1	72.3	22.4	71	N			1		1			0	0	Very fair	Michel.
Algiers			30.31	769.9	66.9	19.4	61	SE			1		0			0	0	Clear	Peter.
La Calle			30.22	767.5	66.9	19.4	84	NW			3		6			0	0	Cloudy	Fleury.
Tunis			30.17	766.4	69.1	20.6	51	NW			5		4			0	0	Cloudy	Jacques.
Sfax			30.21	767.4	73.4	23.0		NW			8		6			0	0	Cloudy	Husson.
Saida			30.28	769.0	70.3	21.3	28	NE			1		1			0	0	Very fair	Millot.
Tebessa			30.20	767.1				NW			2		8			0	0	Pretty fair	Bourgeois.
Geriville			30.23	767.9	62.6	17.0	53	NNW			1		1			0	0	Very fair	Lemaillot.
Laghouat			30.25	768.4	68.0	20.0	44	Calm			0		0			0	0	Clear	François.
Biskra			30.24	768.1	78.4	25.8	39	NW			2		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.61	752.2	30.17	766.3	52.7	11.5	65	NW			2		7			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.45	747.9	30.23	767.8	44.8	7.1	84	W			2		10			0.083	2.1		Dr. Wierzbiski.
Eperies	29.26	743.1	30.15	765.9	45.7	7.6	74	Calm			0		10s		Calm	0	0		Julius Mikolik.
Gratz	28.92	734.5	30.18	766.5	54.0	12.2	42	NW			4		5			0	0		Andreas Rospini.
Hermannstadt	28.61	726.8	30.04	763.1	50.7	10.4	61	SE			2		8			0	0		Prof. Reissenberger.
Kremsmünster	28.84	732.6	30.21	767.2	48.2	9.0	78	WNW			2		10			0	0		Prof. C. Wagner.
Lemberg	29.15	740.3	30.15	765.9	46.6	8.1	96	NE			1		10			0.012	0.3		Dr. T. Stanecki.
Pola	30.01	762.2	30.12	765.0	59.9	15.5	37	E			4		1ks			0	0		I.R. Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.81	757.1	30.09	764.3	48.2	9.0	89	Calm			0		10			0.002	0.05		Karl Stancel.
Trieste	30.07	763.7	30.17	766.3	58.6	14.8	61	N			1		0			0	0	Clear	P. Busin.
Vienna	29.50	749.2	30.20	767.1	52.5	11.4	66	NNW			1		8			0.012	0.3		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon	28.63	727.3	30.17	766.4	45.1	7.3	92	SSW			1		10			0.374	9.5		Prof. M. Passau.
Brussels	29.82	757.4	30.02	762.5	52.9	11.6	79	S			5		10			0.276	7.00	Solar halo	Royal Observatory.
Furnes	29.93	760.1	29.95	760.7	50.2	10.1	93	SSW			5		10			0.346	8.8	Raining	M. E. de Cac.
Maeseyck	29.97	761.1	30.10	764.4	53.1	11.7	81	SSW			6		10			0.303	7.7		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.19	741.4	29.29	744.0	49.6	9.8		S	17	7.6			10			0.210	5.33	Raining	W. Boswell.
Ardrossan	29.28	743.7	29.29	744.0	56	13.3		W			2		8					Overcast	William McNeil.
Armagh, Observatory			29.36	745.7	54.2	12.3		SSW	8	3.6			10					Gloomy	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.41	747.0	56.9	13.8		SSE	18	8.0			10					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.44	747.8	55.3	12.9		SW			2		10					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.00	736.6	29.40	746.7	58.0	14.4		SE			5		10			0.60	15.2	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	84	28.9		NE			2		2					D. clouds	Pvt. G. W. Roberts, A
Cambridge, Observatory			29.66	753.4	54.0	12.2		S			3		10					Raining	H. Todd. [H. C.
Cardington			29.63	752.6	55.0	12.8		S			5		10					Raining	John McLaren.
Chatham, School M. E	29.69	754.1	29.75	755.6	53.2	11.8		S			5		10					Raining	Lt. Col. C.M.Martin, R.E.
Dartmoor	28.17	715.5	29.61	752.1	55.0	12.8		SW			6		10					Rain & fog	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.32	744.7	29.35	745.5	55	12.8		WSW			4		5					D. clouds	J. Mac Gowan.
Dover	29.79	756.7	29.82	757.4	53	11.7		S			6		10					Drizzling	J. Costello.
Eccles, (near Manchester)			29.48	747.5	56.9	13.8		S	7.6	3.4			10					Squally	Thomas Mackereth.
Falmouth, Observatory	29.38	746.2	29.60	751.8	58.2	14.6		SW			6		10					Rain and fog	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.85	758.2	65.3	18.5		S			4		5					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.95	760.7	86	30.0		SW			0		3					D. clouds	
Galway, Queen's College					55	12.8		SW			4		2					D. clouds	S. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.10	764.5	30.13	765.3	70.5	21.4		NE			2		2					D clouds	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.09	738.9	29.30	744.2	54.8	12.7		W			2		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.74	755.4	29.75	755.6	50	10.0		SSW			6		8					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.54	750.3	29.72	754.9	54.7	12.6		SSW			4		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.52	749.8	29.74	755.4	58.5	14.7		SW			6		10					Raining	Dr. S. E. Hoskins, F.R.S.
Helston			29.61	752.1	58	14.4		S			6		10n			0.60	15.2	Raining	M. P. Moyle.
Holyhead	29.36	745.7	29.42	747.3	57	13.9		WSW			3		10					Drizzling	John Tilston.
Jersey	29.54	750.3	29.83	757.7	57.5	14.2		S			6		10					Raining	J. Fisher.
Kew, Observatory			29.70	754.4	55.1	12.8		S	25	11.2			10sd					Raining	The Staff.
Kingstown	29.37	746.0	29.40	746.7	59	15.0		WNW			4		10					Overcast	George Mitchell.
Leicester, Museum			29.54	750.3	56.3	13.5		SW			5		10					Raining	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.92	760.0	29.97*	761.2*	67.2	19.6		NW			2		6					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.14	740.1	29.23	742.4	50	10.0		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.12	765.0	79.1	26.2		NE			3		7					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.32	744.7	29.51	749.5	57.5	14.2		SSW			5		10n		SW	0.541	13.75	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.98	736.1	29.50	749.3	56.4	13.6		S			6		10					Raining	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.59	751.6	58	14.4		S			4		10					Raining	F. Lucas
Plymouth	29.54	750.3	29.61	752.1	58.5	14.7		SW			6		10					Raining	John Merrifield.
Roche's Point	29.47	748.5	29.52	749.8	56	13.3		W			4		8					¾ clouded	W. Kennedy.
Saint Ann's Head	29.31	744.5	29.47	748.5	57	13.9		WSW			6		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys)			29.24	742.7	48.8	9.3		S	24	10.7			10					Raining	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey			29.82	757.4	61.4	16.3		NE			2		9			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.25	742.9	29.48	748.8	55.7	13.2		SW			4		10			0.37	9.4	Raining	W. F. Cooper.
Silloth Rectory	29.30	744.2	29.33	745.0	55.6	13.1	96	SW			4		10			0.050	1.27	Overcast	Rev. F. Redford, M. A.
Stonyhurst, Observatory					55.1	12.8		S			4		10					Raining	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.17	740.9	52	11.1		SSW			2		8					Showery	John Smith.
Stratfield Turgiss	29.48	748.8	29.69	754.1	56.3	13.5		S			2		10					Raining	Rev. C. H. Griffith, F.M.S.
Thurso			29.21	741.9	49	9.4		S			3		9					Raining	John Trotter.
Truro, Royal Institution			29.63	752.6	58	14.4		W			6		10					Raining	W. Newcombe.
Valencia, Observatory			29.49	749.0	56.2	13.4		SW	28	12.5			10					D. clouds	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					57	13.9		SW			7		10			0.50	12.7		Henry Mercer.
Cape Good Hope, Obs'y	30.09	764.3	30.13	765.3	68.4	20.2	53	SSW	23	10.3		0	2						The Staff, for E.J. Stone.
Hobart Town, (Tasmania)			29.18	741.2	46.5	8.1	83	NW			3		4k			0.09	2.3	Cloudy	Francis Abbott, F.R.A.S
Leith, Restalrig Park			29.31	744.5	57.2	14.0		SW			3		10n			0.04	1.0	Raining	Andrew Gibb.
Mauritius, Observatory	29.84	757.9	30.02	762.6	76.0	24.4	63	E	18.0	8.0		0	2		E	0.16	4.1	Squally	C. Meldrum.
Melbourne, Observatory	29.55	750.6	29.64	752.8	48.3	9.1	72	NW	16	7.2			4			0.13	3.3	Lightning	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.14	740.1	53	11.7		SW			4		10			0.3	8.		J. Youngclause.
North Unst, (Shetland Is.)			29.51	749.5	49	9.4		S			8	10	10			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Probably 29.96 in., and 761.0 mm.

Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria, N. 51° 5', W. 13° 35'			29.43	747.5	57	13.9		SW			3		9	W		*15	W	D clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 48° 40', W. 30° 50'			29.40	746.7	54	12.2		W			2		10			3	Cross	D clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			29.48	748.8	57	13.9		WSW			4		10					Misty	Capt. Alex. Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5			65.8	18.8	88	SE			1	3ck		E					Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.08	763.9	30.12	765.1	46.8	8.2	91	SSE			2		10					Foggy	
Fanöe	29.99	761.8	30.01	762.3	46.2	7.9	96	S			4		10						
Godthaab, (Greenland)	29.66	753.3	29.70	754.4	18.0	—7.8	66	NNE			6		0						
Stykkisholm, (Iceland)	28.71	729.2	28.75	730.3	43.0	6.1	91	SE			6		10					Raining	
Thorshavn, (Faröe)	29.04	737.7	29.08	738.6	48.4	9.1	91	S			6		10					Rain & fog	
Vestervig	29.78	756.4	29.95	760.7	41.0	5.0	97	SSE			4		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.49	749.1	30.04	763.1	53.6	12	83	SW			2		10		NW	Blank	Blank	Covered	Collignon, Director.
Amiens, Normal School	29.78	756.3	29.89	759.1	52.9	11.6	87	SSE			2		10			0	0	Covered	Bonvarne, Director.
Avignon, Normal School	30.11	764.8	30.19	766.8	60.8	16	53	N			1					0	0	Light clouds	Mr. Giraud, Director.
Bar-sur-Seine	29.58	751.3	30.15	765.7	56.3	13.5	60	SW			3		5ck		WSW	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	29.85	758.2	30.01	762.3	57.0	13.9	77	SW	21.5	9.6			10		SW	0.409	10.4	Raining	Albert Cheux.
Beauvais	29.74	755.4	30.02	762.6	54.5	12.5	76	S			1		10			0.020	0.50	Covered	Normal School.
Besançon	29.32	744.8	30.23	767.8	51.3	10.7	81	SSW			3		0			0	0	Clear	Normal School.
Bourg-en-Bresse	29.37	746.0	30.29	769.4	46.2	7.9	97	S			4		5cn		N	0	0	Cloudy	Normal School.
Bourges, Normal School	29.58	751.2	30.13	765.2	56.8	13.8	80	SSE			4		5		WNW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.2	29.84	757.8	58.8	14.9	95	SW			6		10		SW	0.030	0.75	Raining	The Staff.
Carcassonne, Normal School	29.78	756.5	30.20	767.0	62.2	16.8	68	W			1		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.84	757.8	29.91	759.7	55.2	12.9	80	NW			8		8		N	0.094	2.4	Very cloudy	Normal School.
Chartres, Normal School	29.58	751.4	30.15	765.9	54.5	12.5	87	SE			4		6			0.031	0.8		Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.80	756.9	30.12	765.0	57.4	14.1	65	SW			3		5ck		SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.82	731.9	30.17	766.2	59.0	15.0	58	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.29	744.0	30.19	766.7	50.7	10.4	77	SE			2		2ck		SE	0.024	0.6	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.09	738.9	30.23	767.9	60.3	15.7	50	SW			1		8		SW	0	0	¾ covered	[illegible]. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.86	758.5	30.08	764.0	58.3	14.6	80	SE			4		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.73	755.1	30.04	763.0	54.9	12.7	81	W			6		8		SW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.29	744.0	30.19	766.8	45.5	7.5	91	SSW			1		10			0	0	Foggy	Pin, Director.
Lorient, Naval Observatory	29.81	757.2	29.91	759.7	59.4	15.2	96	S			6		10			1.535	39.0	Raining	T. Carré, Director.
Mâcon, Normal School	29.52	749.7	30.18	766.6	45.7	7.6	97	Calm			0		10			0.087	2.2	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.17	740.8	30.23	767.8	47.8	8.8	89	W			2		5		E	0	0	Cloudy	Normal School.
Nismes, Normal School	30.02	762.5	30.22	767.6	59.4	15.2	81	NW			1		2		N	0	0	Slightly cl'dy	Boyer, Director.
Orleans, Normal School	29.85	758.3	30.24	768.0	56.5	13.6	82	SSW			3		8		SSW	0	0	Very cloudy	Bernard, Director.
Paris, Observatory	29.80	756.9	30.04	763.0	54.5	12.5	76	S			2		10ck		W	0	0	Covered	National Observatory.
Privas	29.15	740.4	30.23	767.7	55.4	13	63	S			2		0			0	0	Clear	Normal School
Rochefort, Naval Obs'y	30.13	765.3	30.16	766.1	59.0	15.0	78	S			5		10		SW	0.75	19.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.89	759.1	29.97	761.3	54.1	12.3	86	SSE			2		10		SE	0	0	Covered	F. Lucard, Director.
Tarbes, Normal School	29.14	740.1	30.21	767.4	59.0	15	39	SW			1		0			0	0	Clear	T. Hugues, Director.
Villefranche	29.50	749.3	30.23	767.9	47.3	8.5	94	ENE			1		10		Calm	0	0	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.6	29.82	757.3	80.6	27										0.35	9.		L'Abbé Marchesi.
Marseilles, Observatory			30.16	766.1	62.1	16.7	65	NW			1		9			0	0	Cloudy	The Staff.
Mont-Louis	25.04	636.1	30.36	771.1	53.8	12.1	18	ESE	5.6	2.50			8		NW	Inap.	Inap.		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.75	755.6	30.02	762.6	54.9	12.7	76	S			2–3		10			0	0		Marié Davy, Director.
Perpignan			30.19	766.7	60.8	16.0	60	SE	9.3	4.17			5		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.42	544.1			37.4	3.0		N			2		6					Fair	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.71	576.8			44.2	6.8		NW			3		7			0	0	Fair	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.87	758.8	30.04	763.0	55.6	13.1	74	S			2		10k		WSW	0.559	14.2	Covered	E. Renou.
Toulouse, Observatory	29.49	749.1	30.22	767.6	58.6	14.8	76	SE			1		5			0	0		The Staff.
Tours	29.84	757.8	30.03	762.8	58.1	14.5	76	SW			3		10		W	0	0		C. Marquet.
Versailles, (near Paris)			30.04	762.9	55.8	13.2	79	SSW			3		10			0.006	0.14	Lt. showers	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.20	767.0	30.22	767.6	51.6	10.9	90	SE	7.6	3.4			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:55, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	30.05	763.3	30.22	767.6	48.9	9.4	82	SW			1		7			0.013	0.33		Prof. Arndt.
Breslau	29.72	754.8	30.25	768.4	45.7	7.6	93	SSE			2		9			0.087	2.21		Royal University Obs'y.
Carlsruhe	29.76	755.8	30.19	766.9	47.5	8.6	91	SW			1		1			0	0		Albert Senz.
Cassel	29.61	752.1	30.22	767.6	50.5	10.3	78	SSW			2		2	SW		0	0		Dr. H. Möhl.
Crefeld	29.92	760.0	30.08	764.1	55.0	12.8	69	S			4		9			0.16	4.		Director Lose.
Emden	30.10	764.5	30.13	765.4	47.5	8.6	98	S			3		10			0	0		Prof. Prestel.
Frankfort on the Main	29.89	759.2	30.26	768.6	50.4	10.2	65	SSW			0		9			0.024	0.6		Physical Society.
Friedrichshafen	28.78	731.1	30.25	768.4	47.5	8.6	84	S					2	SW		0.665	16.9	Raining	M. Wilhelm.
Hamburg	30.07	763.8	30.14	765.6	48.9	9.4	84	SSW			3		10			0.169	4.3	Cloudy	Captain F. Hegemann.
Kiel	30.09	764.2	30.10	764.6	46.2	7.9	96	SSW			2		10			0.060	1.53		Prof. G. Karsten.
Königsberg, (Prussia)	30.17	766.3	30.24	768.1	47.1	8.4	78	SE										Clear	Prof. E. Luther.
Köslin			30.19	766.7	44.8	7.1		Calm			0		4			0	0		H. Müller.
Leipsic, Observatory	29.82	757.5	30.25	768.3	53.4	11.9	68	SW			2		6	SW		0	0		Prof. Bruhns.
Memel, Naval School	30.21	767.4	30.26	768.6	48.2	9.0	74	WNW			1		8s					D. clouds	Reinbrecht von Skalweit.
Neufahrwasser	30.21	767.2	30.22	767.6	46.4	8.0	82	S			2		5			0	0		A. Lothes.
Posen	29.95	760.7	30.25	768.3	48.2	9.0	90	SW			2		10			0.031	0.8	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.66	753.4	30.23	767.7	49.1	9.5	81	SE			1		9	S		0.174	4.42		Dr. Schur.
Stuttgart	29.23	742.5	30.18	766.6	53.6	12.0	42	S			1		3	W		0.228	5.8	Raining	Prof. Schoder.
Treves, (Trier)	29.53	750.1	30.06	763.4	52.0	11.1	76	S			5		10			0.355	9.02	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.70	728.9	30.23	767.7	49.8	9.9	69	W			1		3ks	SW		0.008	0.2	Raining	Dr. Von Bebber.
Wustrow, Naval School	30.16	766.1	30.21	767.3	46.2	7.9	93	SE			1		10					Covered	E. F. Schütz.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.39	746.4	29.78	756.4	58.5	14.7		NE										Raining	D. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.91	759.7	29.96	761.0	83.4	28.6	65	SW	17.0?	7.6?			1			0	0	D. clouds	
Deesa	29.51	749.4	29.98	761.5	87.0	30.6	32	Calm					0			0	0	Blue sky	
Bombay	29.86	758.5	29.90	759.5	85.3	29.6	66	NW	15.0	6.7			6	WSW	WNW	0	0	D. clouds	
Poona	27.87	707.8	29.88	759.0	80.7	27.1	49	E					4			0	0	D. clouds	
Lahore	29.28	743.8	30.05	763.2	69.7	20.9	66	NE	4.0	1.8			9			0	0	Cloudy	
Belgaum	27.40	696.0	29.97	761.2	71.4	21.9	91	Calm					9	E	E	0.07	1.8	Raining	
Bangalore																			
Roorkee	29.07	738.3	29.98	761.4	78.0	25.6	46	Calm	2.4	1.1						0	0		
Agra	29.37	746.0	29.94	760.4	80.8	27.1	42	W								0	0		
Trichinopoly																			
Nagpur	28.93	734.7	29.98	761.5	76.6	24.8	50	Calm	2.1	0.9						0	0		
Madras																			
Lucknow	29.58	751.4	29.96	761.0	76.3	24.6	60	Calm	1.0	0.4						0	0	Blue sky	
Allahabad	29.64	752.8	29.95	760.8	76.9	24.9	56	Calm	0.5	0.2			0			0	0	Blue sky	
Patna	29.77	756.2	29.96	760.9	77.9	25.5	59	SSE	0.8	0.4			0			0	0	Blue sky	
Hazaribagh	27.93	709.4	29.97	761.1	74.8	23.8	64	Calm	2.9	1.3			4			0	0		
Cuttack	29.88	759.0	29.96	761.1	81.7	27.6	73	N	0.5	0.2						0	0	Blue sky	
Calcutta (Alipore)	29.93	760.3	29.95	760.8	79.8	26.6	86	NW	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.55	750.5	29.94	760.4	79.8	26.6	66	Calm	0.8	0.4			0			0	0	Blue sky	
Chittagong	29.87	758.8	29.96	761.1	83.7	28.7	60	Calm	0.8	0.4			0			0	0	Gloomy	
Sibsagar	29.62	752.4	29.96	761.0	78.3	25.7	84	E	1.0	0.4			5			0	0	D. clouds	
Rangoon																			
Jubbulpore	28.58	726.0	29.97	761.2	74.5	23.6	60	E	1.6	0.7			2	E		0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.27	565.7	30.15	765.8	32.5	0.3	60	N			1		5	NW		0	0		Ab. Dom. Mongini.
Stelvio	22.24	564.9	30.17	766.4	26.4	— 3.1		NE			2		2	S		0	0		Signora Ernesta Manfredi.
Udine	29.73	755.2	30.15	765.8	56.3	13.5	48	SW	1.3	0.6			0			0	0		Prof. Giovanni Clodig.
Padua	30.04	762.9	30.15	765.7	56.7	13.7	55	SW	1.5	0.8			1			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.96	761.0	30.16	766.0	57.4	14.1	51	N	0.7	0.3			0			0	0		Conte Alm. Da Schio.
Verona	29.88	759.0	30.11	764.7	61.2	16.2	82	SW	0	0			0			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.11	739.3	30.15	765.8	57.0	13.9	45	SW			4		3			0	0		Prof. Giuseppe Calza
Milan	29.66	753.4	30.19	766.9	50.7	10.4		SW			1		3			0	0		Ab. Gio. Capelli.
Pavia	29.82	757.5	30.17	766.4	51.4	10.8	90	N			1		1			0	0		Prof. Gio. Cantoni.
Moncalieri	29.26	743.1	30.18	766.6	54.5	12.5	71	NE	1.3	0.6			2	E		0	0		Prof. P. F. Denza.
Mondovi	28.23	717.1	30.17	766.2	55.8	13.2	38	NW			2		3	NW		0	0		Prof. D. C. Bruno.
Porto Maurizio	29.96	760.9	30.18	766.6	62.4	16.9	65	SW			2		4			0	0		Prof. L. Vassallo.
Genoa	29.98	761.6	30.15	765.9	65.3	18.5	44	SW	3.1	1.4			0			0	0		Prof. G. M. Garibaldi.
Piacenza	29.93	760.1	30.19	766.7	53.6	12.0	81	N	3.1	1.4			1			0	0		Dott. G. Manzi.
Parma	29.85	758.3	30.19	766.7	59.0	15.0	62	NW			4		1	NW		0	0		Prof. P. Pigorini.
Florence	29.92	760.0	30.18	766.6	60.8	16.0	43	NE			2		0			0	0		Cav. F. Meucci.
Leghorn	30.07	763.8	30.16	766.0	60.6	15.9	58	ENE	3.1	3.6			0			0	0		Prof. P. Monte.
Siena	28.93	734.7	30.18	766.6	58.1	14.5	38	ENE	1.3	0.6			3	NE		0	0		Prof. L. Toscani.
Urbino	28.58	726.0	30.18	766.0	53.2	11.8	72	NE			4		3			0	0		Prof. P. Serpieri.
Pesaro	30.12	765.1	30.17	766.4	56.1	13.4	77	N	25.5	11.4			1			0	0		Prof. Luigi Guidi.
Ancona	30.04	763.1	30.15	765.8	58.3	14.6	52	N			6		1			0	0		Prof. F. DeBosis.
Grosseto	30.06	763.4	30.17	766.3	62.6	17.0	37	NNE			2		3	SE		0	0		Avv. P. Ponticelli.
Rome	29.88	758.9	30.06	763.4	63.3	17.4	29	N	19.2	8.6			0			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.83	757.6	30.03	762.7	65.5	18.6	45	NE			4		5	NE		0	0		Prof. L. Palmieri.
Lecce					60.3	15.7	73	WNW	18.6	8.3			5	SE		0.433	11.0		Prof. O. De Giorgi.
Cosenza	29.08	738.6	29.97	761.3	62.6	17.0	80	SE	0	0			6			0	0		Prof. F. D. Conti.
Cagliari	29.89	759.1	30.08	763.9	68.2	20.1		NW			2		4	W		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.81	757.2	29.86	758.4	65.8	18.8	40	NE			6		6			0	0		Prof. F. Caffero.
Palermo	29.73	755.2	29.99	761.7	61.9	16.6	54	NW	18.1	8.1			7			0.098	2.5		Prof. G. Cacciatore.
Caltanissetta	27.95	710.0	29.89	755.2	58.6	14.8	51	WNW			6		5	E		0	0		Prof. A. Pagani.
Syracuse	29.83	757.7	29.91	759.6	66.0	18.9	58	NW			4		6	NE		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.49	749.1	30.05	763.2	60.8	16.0	43	NE	0	0			3			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,548.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.4 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.16	766.1	30.26	768.6	46.5	8.1	88	NW	2	0.9						0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.13	587.5	30.17	766.4	57.2	14.0	83	Calm	0	0		0	9n			0.06	1.5	Hazy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosi																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,290 m., or 7,512.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosi, 1,893 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.98	761.6	29.98	761.6	51.4	10.8		S			4					0.016	0.4		
Groningen	29.98	761.6	30.04	763.0	46.8	8.2		S			1					0.004	0.1		
Helder	29.93	760.3	29.93	760.3	48.0	8.9		S			4					0.772	19.6		
Hellevoetsluis			29.97	761.2	50.7	10.4	90	SSE			5								
Utrecht	29.98	761.6	30.03	762.8	48.4	9.1	90	SSE			4		8			0.457	11.6	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.77	756.1	29.82	757.5	50.0	10.0	57	S	14.8	6.6			10			0.150	3.8		
Brönö	29.94	760.4	29.98	761.4	39.6	4.2	65	SE	9	4			3			0	0		
Christiania	29.93	760.3	30.08	764.1	41.0	5.0	86	ENE	0 to 4	0 to 2			10			0.071	1.8	Light fog	
Tromsö	29.95	760.8	30.00	761.9	32.7	0.4	75	SW	7	3			1			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.83	757.7	30.02	762.5	69.1	20.6	94	WSW	4.3	1.9			8			0.118	3.0		Dr. J. A. Sampaio.
Campo Major	29.26	743.1	30.26	768.6	72.5	22.5	52	Calm	0	0			8			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.12	765.0	30.19	766.8	74.5	23.6	65	SE	6.3	2.8			1			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.91	759.8	30.27	768.9	66.9	19.4	76	N	3.8	1.7			4			0	0		The Staff.
Ponta Delgada, (Azores)	30.05	763.2	30.12	765.0	70.2	21.2	91	SSW	11.2	5.0			2			0.047	1.2		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Observer.
S. S. India.			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.82	757.4	30.25	768.4	46.0	7.8	79	SE	7	3			3						Astronomical Obs.
Wilna	29.85	758.1	30.28	769.0	47.8	8.8	83	Calm	0	0			9						Astronomical Obs.
Dorpat	29.95	760.6	30.20	767.0	45.5	7.5	96	ESE	2	1			10						Prof. Dr. Weihrauch
St. Petersburg	30.21	767.2	30.22	767 6	44.4	6.9	91	SE	11	5			10					Raining	Central Physical Obs.
Knopio	29.92	760.0	30.26	768.6	34.5	1.4	100	ENE	13	6			10					Raining	Ch. Forsten.
Kieff	29.52	749.8	30.17	766.2	49.1	9.5	66	NE	7	3			3						Physical Cabinet.
Nikolaiev	29.98	761.5	30.05	763.3	54.7	12.6	80	ENE	9	4			8						Kurdakof.
Kertch	30.00	762.0	30.02	762.5	61.2	16.2	82	ENE	7	3			3						Lagorio.
Moscow	29.84	757.9	30.41	772.3	43.5	6.4	79	S	11	5			4						Meteorological Obs.
Lugan	29.95	760.8	30.15	765 9	55.6	13 1	55	ENE	13	6			0						Meteorological Obs.
Archangel	30.45	773.4	30.47	773.9	25.9	— 3.4	95	ESE	18	8			10						Ogorodnikof.
Tiflis	28.64	727.5	30.05	763.3	63.3	17.4	67	SE	4	2			1						Physical Observatory.
Astrakhan	30.24	768.2	30.16	766.1	58.1	14.5	47	Calm	0	0			1						Sebastianof.
Kasan	30.21	767.2	30.48	774.3	43.3	6.3	69	Calm	0	0			4						Physical Cabinet.
Orenburg	29.74	755.5	30.13	765.2	42.4	5.8		SW	11	5			10						Tschernischet.
Ekaterinburg	29.50	749.4	30.50	774.6	33.6	0.9	61	Calm	0	0			2						Meteorological Obs.
Nukuss	29.89	759.1	30.12	765.0	57.9	14.4	48	WNW	0	0			9						
Kasaly																			Bobrof.
Tashkend	28.55	725.1	30.26	768.5	56.5	13.6	79	Calm	0	0			8						Michelson.
Barnaul	29.57	751.1	30.11	764.7	38.3	3.5	73	SW	0	0			10						Meteorological Obs.
Yeniseisk	29.54	750.4	29.69	754.1	30.0	— 1.1	89	Calm	0	0			0						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.02	762.6	30.17	766.2	51.3	10.7	55	Calm	0	0			3						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					32.4	0.2	96	Calm	0	0			10					Snowing	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 396.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.02	711.8	30.22	767.6	66.2	19.0	56	SW	4.5	2.00		0	7			0	0	Cloudy	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.02	762.6	30.10	764.6	80.2	26.8	79	ENE	2.7	1.2		0	2k		ENE	0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.15	765.7	30.24	768.2	76.5	24.7	54	ENE	10.8	4.8		1	2	E	E	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.91	759.8	80.6	27.0	85	SE	2.8	1.26		5s	1k			0.187	4.75	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.28	769.0	30.32	770.0	29.8	— 1.2	.....	SE	.....	.....	2	.....	4	.....	.....	0	0	.....	
Umea	30.24	767.2	30.26	768.5	35.2	1.8	96	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Hernosand	30.21	767.3	30.26	768.6	36.7	2.6	82	S	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	30.00	762.1	30.18	766.6	36.7	2.6	96	N	.....	.....	2	.....	10	.....	.....	0.028	0.7	Foggy	
Wisby	30.13	765.2	30.19	766.7	42.1	5.6	82	N	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.12	765.1	30.20	767.0	33.8	1.0	93	NNW	1.8	0.8	.....	.....	10	.....	.....	0.017	0.42	Foggy	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.81	731.8	30.26	768.7	44.6	6.9	85	NW	.....	.....	1	.....	10	.....	.....	0.004	0.1	Covered	The Observatory.
Zurich	28.60	726.3	30.26	768.5	46.9	8.3	83	NW	.....	.....	1	.....	9	.....	.....	0.197	5.0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +5.7 mm; Thermometer, —3.4 cent.; Relative Humidity, +11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.87	758.7	60.4	15.8	89	N	17	7.5	.....	.....	10	.....	NE	0.465	11.8	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.86	758.4	64.0	17.8	.....	NW	.....	.....	1	.....	10	.....	.....	Blank	Blank	.....	B. Stefanides.
Valona	.....	.....	29.89	759.2	54.7	12.6	.....	E	.....	.....	1	.....	10	.....	.....	1.65	42.	Raining	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.82	757.4	29.93	760.3	77.5	25.3	60	W	.....	.....	2	.....	5ks;n	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.99	761.7	30.06	763.5	27.7	— 2.4	.....	NW	3.0	1.3	.....	10	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.77	756.1	54	12.2	.....	SW	10	4.5	.....	.....	8s	.....	W	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B.	.....	.....	30.11	764.8	28	— 2.2	94	Calm	0	0	.....	2c	8ks	W	W	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.18	766.6	38	3.3	77	S	3	1.3	.....	5k	0	.....	.....	0.015	0.38	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.51	749.5	29.70	754.4	60.0	15.6	65	SW	.....	.....	5	.....	10s	.....	.....	0.201	5.11	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.93	760.2	29.96	761.0	28	— 2.2	94	E	.....	.....	1	.....	.....	.....	.....	0	0	Gloomy	H. A. Johnson.
Esquimault, B. C.	30.41	772.4	30.45	773.4	33.1	0.6	100	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.90	759.4	35	1.7	85	Calm	0	0	.....	.....	10n	.....	S	Inap.	Inap.	Sleeting	J. McWilliams.
Fredericton, N. B.	30.08	764.0	30.15	765.8	30.0	— 1.1	87	SE	6	2.7	.....	0?	0?	.....	.....	0	0	Cloudy ?	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	30.11	764.8	28	— 2.2	99	W	6	2.7	.....	8k	2ks	W	W	0.030	0.76	Clearing	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	28.77	730.7	29.85	758.2	55	12.8	81	NW	.....	.....	4	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S.	30.07	763.8	30.21	767.3	31	— 0.6	98	SW	.....	.....	2	.....	Haze	.....	.....	0	0	Hazy	F. Allison, M. A.
Hamilton, Ontario	29.59	751.6	29.95	760.7	59.3	15.2	65	W	.....	.....	4	6ck	.....	W	.....	0	0	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	30.02	762.5	30.05	763.3	31	— 0.6	78	N	.....	.....	4	.....	10	.....	.....	0.03	0.8	Overcast	E. Weedon.
*Kingston, Ontario	29.47	748.5	29.83	757.7	55	12.8	87	S	12	5.4	.....	10cs	0	S	.....	Inap.	Inap.	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	30.10	764.5	30.15	765.8	36	2.2	98	NE	3	1.3	.....	.....	10n	.....	.....	0.10	2.5	Squally	C. H. Rigby.
*Montreal, Quebec	29.56	750.8	29.76	755.9	50	10.0	87	S	20	8.9	.....	8ck	2s	W	.....	0.01	0.3	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.06	738.1	29.75	755.6	48	8.9	92	W	30	13.4	.....	.....	10n	.....	W	0.11	2.8	Cloudy	Rev. R. Mosley
Peterboro, Ontario	29.00	736.6	29.74	755.4	58.7	14.8	76	SW	.....	.....	4	0	4ks	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.18	741.2	29.85	758.2	59	15.0	76	SW	18	8.0	.....	10ck	0	SW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S.	30.15	765.8	30.20	767.1	33.7	0.9	.....	W	2	0.9	.....	.....	.....	.....	.....	0	0	Dark	Peter Grant
Port Stanley, Ontario	29.24	742.7	29.87	758.7	57	13.9	86	SW	18	8.0	.....	8ck	0	W	.....	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.53	750.0	29.86	758.4	40	4.4	73	NE	14	6.3	.....	.....	10n	.....	NE	0.05	1.3	Light rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.12	739.6	29.58	751.3	42	5.6	96	E	3	1.3	.....	.....	8s	.....	W	0.15	3.8	Fair	W. H. McIntyre.
St. John, N. B.	29.99	761.7	30.16	766.1	32	0.0	89	Calm	0	0	.....	10k	0	.....	.....	0.12	3.0	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.17	740.9	29.87	758.7	46	7.8	91	NW	18	8.0	.....	.....	10n	.....	W	0.10	2.5	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	29.76	755.9	53	11.7	80	SW	20	8.9	.....	.....	10n	.....	W	Inap.	Inap.	Threatening	R. J. Cole.
Stratford, Ontario	28.59	726.2	29.85	758.2	55.3	12.9	84	NW	22.0	9.8	.....	.....	5ks	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	30.16	766.1	30.19	766.8	39	3.9	80	W	2	0.9	.....	2k	2n	N	N	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.41	747.0	29.79	756.7	56	13.3	81	SW	9	4.0	.....	2c	2s	W	SW	0	0	Fair	Magnetic Observatory.
Windsor, N. S.	30.15	765.8	30.25	768.3	33.0	0.6	80	Calm	0	0	.....	8cs	.....	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	35.0	1.7	90	S	.....	.....	.....	.....	10n	.....	.....	0.05	1.3	Cloudy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.78	756.4	30.01	762.2	55	12.8	80	S	10	4.5			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.27	743.4	29.93	760.2	41	5.0	91	NW	12	5.4		0	8ks		NW	1.30	33.0	Fair	
Atlantic City, New Jersey	30.16	766.1	30.18	766.6	61	16.1	82	SW	12	5.4		5k	0	SW		0	0	Fair	
Augusta, Georgia	30.07	763.8	30.26	768.6	62	16.7	94	Calm	0	0			Fog		Calm	0	0	Foggy	
Baltimore, Maryland	30.11	764.8	30.16	766.1	57	13.9	87	SW	7	3.1		8k	0	SW		0.01	0.3	Fair	
Barnegat, New Jersey	30.14	765.5	30.16	766.1	59	15.0	87	SW	16	7.2		8ck	0	W		0	0	Fair	
Bismarck, Dakota	28.40	721.3	30.12	765.0	31	— 0.6	89	W	13	5.8			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.38	695.4	30.17	766.3	25	— 3.9	75	S	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.94	760.5	30.10	764.5	55	12.8	87	SW	9	4.0			10s		SW	0	0	Cloudy	
Brackettville, Texas	28.69	728.7	29.68	753.9	75	23.9	85	E	5	2.2			10n		Calm	0.01	0.3	Light rain	
Breckenridge, Minnesota	29.17	740.9	30.23	767.8	25	— 3.9	88	W	8	3.6		0	0			0	0	Clear	
Brownsville, Texas	29.81	757.2	29.88	758.9	78	25.6	90	SE	1	0.4		8c	0	W		0	0	Cloudy	
Buffalo, New York	29.15	740.4	29.83	757.7	60.0	15.6	70	S	16	7.2		0	8s		SW	0	0	Fair	
Burlington, Vermont	29.65	753.1	29.91	759.7	55	11.7	79	S	18	8.0		10c	0	SW		0	0	Cloudy	
Cairo, Illinois	29.73	755.1	30.12	765.0	60	15.6	88	NW	3	1.3			10s		Calm	0	0	Cloudy	
Camp Grant, Arizona																			
Camp Verde, Arizona	26 60	675.6	30.09	764.3	37	2.8	53	NW				0	Haze			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.22	767.6	30.23	767.8	65	18.3	84	S	18	8.0			10s		SW	0.05	1.3	Cloudy	
Cape Henry, Virginia	30.21	767.3	30.24	768.1	60	15.6	76	S	8	3.6		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.27	768.8	30.28	769.1	71	21.7	80	SE	18	8.0		5k	0	SW		0	0	Fair	
Cape May, New Jersey	30.16	766.1	30.19	766.8	60	15.6	82	S	26	11.6		5k		W		0	0	Fair	
Charleston, South Carolina	30.19	766.8	30.25	768.3	68	20.0	94	E	3	1.3			10s		SW	0.23	5.8	Cloudy	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	23	— 5.0	100	E	4	1.8			10n		Calm	0.12	3.0	Light snow	
Chicago, Illinois	29.43	747.5	30.13	765.3	43	6.1	83	N	8	3.6			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.40	746.7	30.03	762.7	62	16.7	72	SW	5	2.2		5ck	0	W		0	0	Clear	
Cleveland, Ohio	29.27	743.4	29.97	761.2	62	16.7	61	S	19	8.5		10k	0	S		0	0	Cloudy	
Concho, Texas					61	16.1	83	N	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.46	748.3	29.92	760.0	71	21.7	95	SE	8	3.6		Haze	2s	Calm	S	0	0	Fair	
Davenport, Iowa	29.57	751.1	30.23	767.8	41	5.0	83	NW	1	0.4		1cs	Haze	SW	Calm	Inap.	Inap.	Fair	
Denison, Texas	29.12	739.6	29.89	759.2	70	21.1	95	SW	8	3.6			10ks		SW	0.03	0.8	Cloudy	
Denver, Colorado	24.91	632.7	30.13	765.3	28	— 2.2	88	N	4	1.8			10n		Calm	0.30	7.6	Light snow	
Detroit, Michigan	29.28	743.7	29.93	760.2	57	13.9	69	NW	16	7.2		2cs	8s	W	NW	0	0	Threatening	
Dodge City, Kansas	27.56	700 0	29.92	760.0	39	3.9	91	NE	16	7.2			10s		NE	0	0	Cloudy	
Dubuque, Iowa	29.49	749.0	30.21	767.3	39	3.9	81	NW	3	1.3		2c	0			Inap.	Inap.	Fair	
Duluth, Minnesota	29.36	745.7	30.06	763.5	37	2.8	62	NW	6	2.7			10s		NW	0	0	Cloudy	
Eagle Pass, Texas	29.07	738.4	29.77	756.1	74	23.3	95	SE	4	1.8			10s		S	0	0	Cloudy	
Eastport, Maine	30.08	764.0	30.15	765.8	43	6.1	83	S	4	1.8		10k	Sm'e	W		0	0	Cloudy	
Erie, Pennsylvania	29.19	741.4	29.88	758.9	62	16.7	66	SW	20	8.9			10s			0	0	Cloudy	
Escanaba, Michigan	29.83	745.0	29.99	761.7	39	3.9	82	SW	6	2.7		0	1s		SW	0.60	15.2	Clear	
Florence, Arizona	28.24	717.3	29.84	757.9	50	10.0	68	Calm				2c	0	Calm		0	0	Fair	
Fort Bayard, New Mexico	23.96	608.6	29.96	761.0	43	6.1	66	Calm	0	0		2cs	0	SW		0	0	Clear	
Fort Craig, New Mexico	25.40	645.2			42	5.6	50	N	4	1.8		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.47	748.5	30.01	762.2	54	12.2	93	N	5	2.2			10n		Calm	1.08	27.4	Light rain	
Fort Griffin, Texas	28.68	728.5	29.93	760.2	60	15.6	82	N	12	5.4			10s		Calm	0	0	Threatening	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.78	731.0	29.91	759.7	45	7.2	92	N	24	10.7			10s		N	Inap.	Inap.	Threatening	
Fort Sully, Dakota	28.62	726.9	30.41	772.4	24	— 4.4	74	NW	4	1.8		0	0			0	0	Clear	
Galveston, Texas	29.94	760.5	29.98	761.5	74	23.3	100	SE	6	2.7			10ks		S	0	0	Cloudy	
Grand Haven, Michigan	29.43	746 7	30.05	763.3	49	9.4	71	NW	18	8.0		0	5ks		NW	0	0	Fair	
Indianapolis, Indiana	29.32	744.7	30.09	764.3	54	12.2	79	NW	10	4.5			10s		W	0	0	Cloudy	
Indianola, Texas	29.91	759.7	29.93	760.2	77	25.0	95	SE	10	4.5		5k	2ks	S	S	0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.18	766.6	30.20	767.1	70	21.1	90	E	3	1.3		0	2ks		E	Inap.	Inap.	Fair	
Keokuk, Iowa	29.58	751.3	30.22	767.6	41	5.0	83	NW	5	2.2		2ck	5s	Calm	Calm	0	0	Fair	
Key West, Florida	30.07	763.8	30.10	764.5	78.5	25.8	75	E	9	4.0		3c;k	0	Calm; E		0	0	Fair	
Kittyhawk, North Carolina	30.26	768.6	30.28	769.1	62	16.7	100	SW	3	1.3		0	2ks		SW	0	0	Fair	
Knoxville, Tennessee	29.33	742.4	30.25	768.3	52	11.1	86	NE	4	1.8		6ck	0	W		0	0	Cloudy	
La Crosse, Wisconsin	29.41	747.0	30.17	766.3	39	3.9	72	W	5	2.2		0	0			0.91	23.1	Clear	
La Mesilla, New Mexico	26.00	660.4	30.15	765.8	42	5.6	42	Calm	0	0		0	5s		SW	0	0	Fair	
Laredo, Texas					79	26.1	78	SE	8	3.6		10k	0	S		0	0	Cloudy	
Leavenworth, Kansas	29.36	745.7	30.23	767.8	42	5.6	83	N	7	3.1		2k	0	Calm		0	0	Fair	
Los Angeles, California	29.46	748.3	29.80	756.9	52	11.1	59	NE	5	2.2		0	5ks		NE	0	0	Fair	
Louisville, Kentucky	29.53	749.8	30.07	763.8	63	17.2	77	S	8	3.6		5c	2s	SW	SW	0	0	Fair	
Lynchburg, Virginia	29.54	750.3	30.23	767.8	58	14.4	76	Calm	0	0		5c	0	NE		0	0	Fair	
Maricopa Wells, Arizona					43	6.1	24									0	0	Clear	
Marquette, Michigan	29.21	741.9	29.92	760.0	40	4.4	63	Calm	0	0		0	0			0.15	3.8	Clear	
Mason, Texas	28.28	718.3	29.96	761.0	74	23.3	81	SE	8	3.6			10s			0	0	Cloudy	
Memphis, Tennessee	29.78	756.4	30.09	764.3	65	18.3	90	SW	4	1.8			10s		SW	0	0	Cloudy	
Milwaukee, Wisconsin	29.43	747.5	30.13	765.3	42	5.6	83	NW	12	5.4			10s		NW	0.50	12.7	Cloudy	
Mobile, Alabama	30.09	764.3	30.14	765.5	70	21.1	95	SE	4	1.8			10n		S	0.01	0.3	Light rain	
Montgomery, Alabama	29.97	761.2	30.20	767.1	59	15.0	93	Calm	0	0		2s	Fog	W	Calm	0	0	Fair	
Morgantown, West Virginia	29.04	737.8	30.07	763.8	62	16.7	66	SW	11	4.9			10s		SW	0	0	Cloudy	
Mt. Washington, N. H.	23.69	601.7	30.05	763.3	37	2.8	100	W	78	34.9			Fog		W	0	0	Foggy	
Nashville, Tennessee	29.61	752.1	30.14	765.5	58	14.4	81	SE	4	1.8		0	2s		SW	0	0	Fair	
New Haven, Connecticut	30.00	762.0	30.11	764.8	58	14.4	87	SW	10	4.5			10s; fg		SW	0	0	Cloudy	
New London, Connecticut	30.09	764.3	30.14	765.5	57	13.9	94	SW	15	6.7		0	10s		W	0.01	0.3	Cloudy	
New Orleans, Louisiana	30.00	762.0	30.06	763.5	72	22.2	95	E	5	2.2			9ks		S	0.26	6.6	Cloudy	
Newport, Rhode Island	30.10	764.5	30.15	765.8	57	13.9	93	S	12	5.4			10ks		SW	0	0	Threatening	
New York, New York	29.96	761.0	30.14	765.5	57	13.9	93	SW	17	7.6			10ks		S	Inap.	Inap.	Cloudy	
Norfolk, Virginia	30.22	767.6	30.28	769.1	55	12.8	100	S	5	2.2		4ck	Fog	W	Calm	0	0	Fair	
North Platte, Nebraska	27.34	694.4	30.05	763.3	29	— 1.7	89	NW	2	0.9		5k	5s	NW	NW	Inap.	Inap.	Cloudy	
Olympia, Washington Ter.	30.40	772.1	30.44	773.2	32	0.0	95	S	1	0.4			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	29.16	740.7	30.29	769.4	37	2.8	90	N	5	2.2		5c	5s	W	Calm	0.10	2.5	Cloudy	
Oswego, New York	29.53	750.0	29.84	757.9	60	15.6	70	S	16	7.2		8k	0	W		0	0	Cloudy	
Pembina, Dakota	29.30	744.2	30.17	766.3	26.5	— 3.1	88	W	8	3.6		8k	0	Calm		0	0	Fair	
Philadelphia, Pennsylvania	30.12	765.0	30.17	766.3	57	13.9	93	SW	13	5.8		0	8ks		SW	0	0	Fair	
Phoenix, Arizona					50	10.0	38	Calm				0	5ks		S	0	0	Fair	
Pike's Peak, Colorado	17.62	447.5	29.83	757.7	8	—13.3	77	SW	16	7.2			10s		SW	0.09	2.3	Cloudy	
Pioche, Nevada	23.93	607.8	29.70	754.4	20	— 6.7	70	N	9	4.0		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.21	741.9	30.00	762.0	63	17.2	62	W	7	3.1			10s		W	0	0	Cloudy	
Port Huron, Michigan	29.24	742.7	29.89	759.2	55	12.8	100	NW	17	7.6			10ks		W	0	0	Threatening	
Portland, Maine	30.02	762.5	30.07	763.8	45	7.2	92	Calm	0	0			Fog			0	0	Dense fog	
Portland, Oregon	30.38	771.6	30.48	774.2	37	2.8	90	N	5	2.2			10s		Calm	0	0	Cloudy	
Prescott, Arizona	24.58	624.3	29.94	760.5	36	2.2	53	SE				0	0			0	0	Clear	
Punta Rassa, Florida	30.12	765.0	30.14	765.5	73	22.8	76	NE	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.83	757.7	30.20	767.1	46	7.8	33	N	16	7.2		0	0			0	0	Clear	
Rochester, New York	29.22	742.2	29.81	757.2	60	15.6	70	SW	15	6.7		8k	0	W		Inap.	Inap.	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.82	757.4	30.43	772.9	34	1.1	100	Calm	0	0			10s; fg		Calm	0	0	Cloudy	
Sacramento, California	29.97	761.2	30.06	763.5	45	7.2	38	N	20	8.9		0	0			0	0	Clear	
St. Louis, Missouri	29.59	751.6	30.17	766.3	49	9.4	78	N	12	5.4			10s		Calm	0	0	Cloudy	
St. Marks, Florida	30.17	766.3	30.19	766.8	65	18.3	94	E	6	2.7		5k	0	W		0	0	Fair	
St. Paul, Minnesota	29.30	744.2	30.16	766.1	35	1.7	61	SW	7	3.1		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.67	652.0	30.00	762.0	27	—2.8	77	Calm	0	0		5c	0	S		0.29	7.4	Fair	
San Antonio, Texas	29.21	741.9	29.77	756.1	75	23.9	95	SE	4	1.8		0	Haze		SE	0	0	Threatening	
San Diego, California	29.78	756.4	29.85	758.2	57	13.9	69	SE	10	4.5		5k	0	SW		0	0	Fair	
Sandusky, Ohio	29.30	744.2	29.96	761.0	60	15.6	76	SW	16	7.2			10ks		W	0	0	Cloudy	
Sandy Hook, New Jersey	30.12	765.0	30.14	765.5	60	15.6	88	SW	16	7.2		5ck	5ks	W	SW	0	0	Cloudy	
San Francisco, California	29.96	761.0	30.02	762.5	53	11.7	38	N	32	14.3		0	0			0	0	Clear	
Santa Fé, New Mexico	23.07	586.0	29.61	752.1	47	8.3	42	SE	10	4.5			10s		SE	0	0	Cloudy	
Savannah, Georgia	30.15	765.8	30.25	768.3	63	17.2	100	NW	3	1.3			Fog			0	0	Foggy	
Shreveport, Louisiana	29.79	756.7	30.00	762.0	70	21.1	100	SE	4	1.8			10s		Calm	0	0	Cloudy	
Smithville, North Carolina	30.23	767.8	30.27	768.8	68	20.0	94	E	7	3.1			10s		W	0	0	Cloudy	
Springfield, Massachusetts	29.88	758.9	30.01	762.2	55	12.8	93	S	6	2.7			10s		S	0.03	0.8	Cloudy	
Stanwix, Arizona					45	7.2	24	SW				0	0			0	0	Clear	
Stockton, Texas	26.87	682.5	29.87	758.7	52	11.1	79	SW	4	1.8		0	1s		Calm	0	0	Clear	
Thatcher's Island, Mass	30.06	763.5	30.11	764.8	53	11.7	93	S	16	7.2			10s		S	0	0	Cloudy	
Toledo, Ohio	29.32	744.7	29.98	761.5	57	13.9	69	W	16	7.2		2cs	2s	W	W	0	0	Fair	
Tucson, Arizona	27.40	696.0	29.95	760.7	60	15.6	94	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.20	767.1	30.23	767.8	71	21.7	95	E	1	0.4		2k	Fog	Calm	Calm	0.08	2.0	Fair	
Umatilla, Oregon	30.15	765.8			23	—5.0	72	SE	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.85	758.2	30.10	764.5	69	20.6	90	SE	4	1.8			10s		S	0	0	Cloudy	
Virginia City, Montana	24.42	620.3	29.90	759.4	13	—10.6	80	E	2	0.9		0	0			0	0	Clear	
Visalia, California	29.53	750.0	29.92	760.0	33	0.6	79	SE	1	0.4		2ck	5ks	S	S	0	0	Cloudy	
Washington, D. C.	30.08	764.0	30.18	766.6	57	13.9	94	S	7	3.1		5cs	2ks	SW	SW	Inap	Inap.	Cloudy	
Wickenburg, Arizona					33	0.6	32	SW				0	8ks		Calm	0	0	Threatening	
Wilmington, N. Carolina	30.18	766.6	30.26	768.6	63	17.2	94	E	4	1.8			10s		W	0	0	Cloudy	
Winnemucca, Nevada	25.74	653.8	30.10	764.5	22	—5.6	72	N	10	4.5		0	0			Inap.	Inap.	Clear	
Wood's Holl, Mass	30.13	765.3	30.18	766.6	57	13.9	94	SW	16	7.2			10s		SW	0	0	Cloudy	
Yankton, Dakota	29.03	737.3	30.41	772.4	28	—2.2	82	W	3	1.3		2c	0	W		0.30	7.6	Fair	
Yuma, Arizona	29.64	752.8	29.80	756.9	56	13.3	24	N	3	1.3		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.78	756.4	29.83	757.7	30.5	—0.8	100	W	8	3.6			10n			Inap.	Inap.	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	30.02	762.5	30.04	763.0	81	27.2	78	SE	2.4	1.1		4k	0	SE		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.15	765.8	30.16	766.1	79	26.1	82	N	3	1.3		8c	8n	N		0	0		James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	84	28.9		NE			1					0	0	Cloudy.	F. M Everett.
St. Thomas, W. I.					84	28.9	71	E	3	1.3		2c	2k	E		0	0		G. O. Gellich.
Paramaribo, D. Guiana, S. A.			30.00	762.0	83	28.3	79	E			2	3c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.22	640.6			65.0	18.3	84	Calm			0	0	8ks			0.86	21.8	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1(?)m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of [illegible]

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	30.02	762.5	50	10.0	51	10.6	40	N	24	10.7			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.28	769.1			72	22.2	95	NE	8	3.6			10			0.07	1.8			D. clouds	
Navy Yard, Portsmouth, N.H	30.14	765.5	56	13.3	50	10.0	93	SSW	10	4.5			10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	30.13	765 3	56	13.3	48.5	9.2	89	Calm			0		Haze		Calm	0	0			Clear	
Adams. Montevideo, Uruguay	30.15	765.3	60	15 6	56	13.3	63	ESE			1		1		S	0	0	None		D. clouds	
Alert. N. 33° 54′, E. 130° 05′	30.36†	771.1†	63	17.2	63	17.2	72	SE			1		0					Smooth		Blue sky	
Alliance, Constantinople, Turkey.	29.97	761.2	65	18.3	63	17.2	83	NNE			4		10		N&E					Overcast	
Ashuelot. Tientsin, China	30.17	766.3	58	14.4	55	12.8	80	SW			1		10		Calm			Smooth		D. clouds	
Canonicus, New Orleans, La	30.08	764.0	54	12.2	73	22.8	95	ESE			2		8		SE					Partly cl'dy	
Colorado, New York, N. Y	30.24	768.1	71	21.7	72	22.2	54	SSW	8	3.6			9		SW	0	0			Light fog	
Despatch, Constantinople, Turkey.	29.97	761.2	65	18.3	63	17.2	89	NE			3		10		NE					Raining	
Franklin, Norfolk, Va	30.33	770.4	56	13.3	59	15.0	94	SW	5	2.2					SW	0	0			Clear	
Gettysburg, Catania, Italy	29.86‡	758.4‡			71	21.7	85	NNW			1–2		2		N	0	0			D. clouds	
Kearsarge, N. 17° 12′, E. 40° 38′	29.94	760.5			89	31.7	80	SSE			2		1			0	0	Smooth	S&E	D. clouds	
Lackawana, Port Townsend, W. T.	30.48	774.2			43	6.1	100	S			0–1		2		N&W			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.90	759.4	68	20.0	67	19.4	74	E			0		0		Calm	Light	Light	Smooth		Drizzling	
Michigan, Detroit, Michigan	29.42	747 3	63	17.2	56	13.3	87	WNW			5		8		W					Cloudy	
Monocacy, Yokohama, Japan	30.14	765 5	57	13.9	52	11.1	86	N&W			1		2		N&W	0	0	Smooth		D. clouds	
Monongahela, Gibraltar, Spain	30.35	770.9	70	21.1	70	21.1	70	N&W			1–2		cks					Smooth		D. clouds	
New Hampshire, Port Royal, S.C	30.42	772.7			70	21.1	90	Calm	0	0			2		SW	0	0			D. clouds	
Omaha, S. 27° 40′, W. 74° 50′	30.19	766.8	64	17.8	62	16.7	66	SSE	18	8.0			8		S	0	0	Moderate.	S	Cloudy	
Onward, Callao, Peru	30.07†	763.8†	69	20.6	67	19.4	80	SE			1		10					Long	W	D. clouds	
Ossipee, New York, N. Y	30.19	766.8	64	17.8	60	15.6	82	SSW			3		10		SSW					Misty	
Palos, Shanghai, China	30.27	768.8	65	18.3	59	15 0	88	ESE			2		0							Clear	
Pensacola, Mare Island, Cal	30.13	765.3			55	12.8	56	NNW			6		0			0	0				
Plymouth. Norfolk, Va	30.54†	775.7†	63	17.2	58	14.4	94	S			1–2		6		S					Pleasant	
Ranger, Shanghai, China	30.28	769.1			64	17.8	83	SE			1		1		Calm					Pleasant	
Rio Bravo, Brownsville, Texas	29.76	755.9			77	25.0	91	SE			1		1		wsw					D. clouds	
Santee, Annapolis, Md	30.22	767.6	62	16.7	60	15.6	82	SW			4		5		W	0	0			Cloudy	
St. Louis, League Island, Pa	30.05	763.3	51	10.6	56	13.3	100	SW	15	6.7			8		SW	0	0				
Swatara, Hampton Roads, Va	30.31	769.9			61	16.1	88	S			2		7		S&W					D. clouds	
Tennessee, Yokohama, Japan	30.24	768.1	62	16.7	53	11.7	80	NW	6	2.7			0			0	0	Smooth		Misty	
Trenton, Villefranche, France	30.22†	767.6†	68	20.0	66	18.9	74	SW	2	0.9			7		S&W					D. clouds	
Vandalia, Villefranche, France	30.21	767.3	67	19.4	65	18.3	73	SSW			1		8		Calm					D. clouds	
Wabash, Boston, Mass	30.14	765.5	60	15.6	56	13.3	81	SW	11	4.9			10		Calm	0	0			D. clouds	
Wyoming, Washington, D. C	30.34†	770.6†	61	16.1	59	15.0		S			2		5		S&W					Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 31° 09′, E. 132° 08′			30.45*	773.4*	68	20.0	70	NE			1		1		NE	Smooth		D. clouds	Lt. Z. L. Tanner, U.S.N
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 30° 56′, W. 148° 31′			30.05†	763.3†				WNW			5-6		Heavy		W	Long	WNW	Squally	Capt. John Metcalf.
S. S. Gaelic, N. 41° 37′, W. 135° 09′			30.27*	768.8*	61	16.1	??	ESE			6		ck		E	Short	E	Overcast	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 49° 21′, W. 10° 55′	N89E	10.1	29.68	753.9	56.0	13.3	94	SW			5		10			dough		Drizzling	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels.	True Course Toward—	Hourly Rate in Knots.	Barometer Reduced to Sea-Level. Inches.	Barometer Reduced to Sea-Level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-Swell. Character	Sea-Swell. Direction From—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. Philadelphia, Pa.			30.33*	770.4*	59	15.0	??	SW			6		4		SW			Rainy.	Captain Sargent.
S. S. Ohio. Philadelphia, Pa.			30.19	766.8	65	18.3	89	SW			1				SW			Clear.	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.44†	747.8†	67	19.4	100	SSW			5		10		SSW			Raining.	Captain Harris.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

Names of Vessels.	True Course Toward—	Hourly Rate in Knots.	Barometer Reduced to Sea-Level. Inches.	Barometer Reduced to Sea-Level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-Swell. Character	Sea-Swell. Direction From—	Weather.	Observer.
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 47° 28′, W. 41° 05′			29.66*	753.4*	51	10.6		NNE	25	11.2			8		NE	Heavy	NNE	D. clouds.	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

* Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

Names of Vessels.	True Course Toward—	Hourly Rate in Knots.	Barometer Reduced to Sea-Level. Inches.	Barometer Reduced to Sea-Level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-Swell. Character	Sea-Swell. Direction From—	Weather.	Observer.
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Names of Vessels.	True Course Toward—	Hourly Rate in Knots.	Barometer Reduced to Sea-Level. Inches.	Barometer Reduced to Sea-Level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'wr 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-Swell. Character	Sea-Swell. Direction From—	Weather.	Observer.
Schooner Addie Fuller, N. 40° 26′, W. 72° 45′			30.16	766.1	63	17.2	83	SSW	16	7.2		0	18			Short		Clear.	Capt. James Jorgensen.

Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 30, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.25	768.4	70.7	21.5	82	N			1		2			0	0	Fair	Michel.
Algiers			30.20	767.0	66.6	19.2	79	NW			1		1			0	0	Very fair	Peter.
La Calle			30.16	766.0	68.4	20.2	72	NW			3		5			0	0	Cloudy	Fleury.
Tunis			30.14	765.6	69.8	21.0	57	NW			5		5			0	0	Cloudy	Jacques.
Sfax			30.16	766.0	69.8	21.0		N			1		8			0	0	Very cloudy	Husson.
Saida			30.28	769.2	69.8	21.0	23	NE			1		1			0	0	Very fair	Millot.
Tebessa			30.17	766.3				W			2		2			0	0	Fair	Bourgeois.
Geriville			30.23	767.9	66.9	19.4	28	SW			2		1			0	0	Very fair	Lemaillot.
Laghouat			30.24	768.1	68.0	20.0	40	N			2		0			0	0	Clear	François.
Biskra			30.21	767.3	76.1	24.5	34	NW			1		0			0	0	Clear	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.47	748.5	30.02	762.6	49.3	9.6	75	SW			1		10			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.25	742.9	30.02	762.6	50.4	10.2	76	NE			1		2			0.004	0.1		Dr. Wierzbiski.
Eperies	29.12	739.6	30.00	762.0	51.8	11.0	63	Calm			0		8c;s			0	0		Julius Mikolik.
Gratz	28.77	730.7	30.04	763.1	43.9	6.6	71	SW			2		10			0	0		Andreas Rospini.
Hermannstadt	28.56	725.5	29.98	761.6	53.2	11.8	62	SE			1		5			0	0		Prof. C. Wagner.
Kremsmünster	28.62	726.9	30.00	762.0	38.8	3.8	93	Calm			0		10			0.343	8.7		Prof. T. Stanecki.
Lemberg	29.04	737.6	30.04	763.1	47.1	8.4	89	SE			1		10			0	0		I.R. Hydrographic Office.
Pola	29.57	758.8	29.98	761.6	56.8	13.8	52	NW			2		10s			0	0		Johann Tamas, S. J.
Szathmar																0	0		Karl Stancel.
Szegedin	29.77	756.1	30.05	763.3	50.0	10.0	82	Calm			0		6			0	0		P. Busin.
Trieste	29.93	760.1	30.03	762.7	57.0	13.9	84	Calm			0		10			0.012	0.3		I. R. Central Met. Obs'y.
Vienna	29.28	743.6	29.98	761.6	46.2	7.9	76	Calm			0		10						

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.48	723.4	29.98	761.5	55.0	12.8	79	WSW			1		9			0.071	1.8		Prof. M. Passau.
Brussels	29.73	755.2	29.93	760.2	56.8	13.8	81	SW			3		10	WNW	WSW	0.031	0.80		Royal Observatory.
Furnes	29.88	758.9	29.90	759.5	55.9	13.3	86	SSW			3		10			0.083	2.1		M. E. de Cae.
Maeseyck	29.79	756.7	29.92	760.0	57.6	14.2	84	WSW			4		5			0.055	1.4		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Aberdeen	29.30	744.2	29.40	746.7	50.1	10.1		S	15	6.7			10			0.260	6.30	Overcast	W. Boswell.
Ardrossan	29.26	743.2	29.28	743.7	52	11.1		ESE			2		8					Raining	William McNeil.
Armagh, Observatory			29.26	743.2	56.6	13.7		SSW	19	8.5			10					Raining	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			29.50	749.3	56.6	13.7		SSE	24	10.7			9					Overcast	John Hartnup.
Birr Castle, (Parsonstown)			29.35	745.5	59.7	15.4		SW			3		10					Misty	J. Dreyer.
Bradford, Yorkshire	29.13	739.9	29.52	749.8	57.0	13.9		NW			5		10			0.15	3.8	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	84	28.9		NE			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.76	755.9	54.0	12.2		SW			2		10			Blank	Blank	Overcast	H. Todd. [H. C.
Cardington			29.75	755.6	57.0	13.9		SW			2		7					D. clouds	John McLaren.
Chatham, School M. E.	29.85	758.4	29.99	761.7	55.2	12.9		SW			1		7					Hazy	Lt. Col. C.M.Martin, R.E.
Dartmoor	28.34	719.8	29.79	756.7	55.0	12.8		SW			6		10					Rain and fog	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	29.23	742.4	29.26	743.2	55	12.8		SW			3		10					Overcast	J. Mac Gowan.
Dover	29.86	758.4	29.88	758.9	52	11.1		WSW			4		4					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.54	750.3	54.7	12.6		S	9.6	4.3			10					Squally	Thomas Mackereth.
Falmouth, Observatory	29.51	750.3	29.76	755.9	58.8	14.9		SW			6		10					Rain and fog	The Staff.
Fort Napier, (Natal)	27.73	704.3	29.96	761.0	63.9	17.7		E			2		5					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)			29.94	760.5	85	29.4		W			1		4					D. clouds	
Galway, Queen's College					56	13.3		S			8		10					Gloomy	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.16	766.1	30.19	766.8	73.0	22.8		NE			1		1					Blue sky	Corpl. C. Aitken, A.H.C.
Glasgow, Observatory	29.10	739.1	29.30	744.2	51.0	10.6		ESE			2		10					Drizzling	D. G. Maclean.
Great Yarmouth	29.80	756.9	29.80	756.9	54	12.2		SW			3		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.65	753.1	29.82	757.4	60.0	15.6		SW			4		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.68	753.9	29.90	759.4	58.5	14.7		SSW			3		8					Threatening	Dr. S. E. Hoskins, F.R.S.
Helston			29.81	757.2	59	15.0		SW			6		10n			0.13	3.3	Drizzling	M. P. Moyle.
Holyhead	29.36	745.7	29.41	747.0	57	13.9		SSW			6		10					Drizzling	John Tilston.
Jersey	29.68	753.9	29.97	761.2	58.5	14.7		SW			5		9			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory			29.82	757.4	57.9	14.4		S	18	8.0			9kd					Threatening	The Staff.
Kingstown	29.35	745.5	29.37	746.0	64	17.8		WSW			5		9					Overcast	George Mitchell.
Leicester, Museum			29.66	753.4	54.7	12.6		SW			4		6					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.88	758.9	29.56*	750.8*	66.6	19.2		NW			2		8					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.18	741.2	29.28	743.7	49	9.4		SW			1		5					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.05	763.3	80.2	26.8		NE			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.44	747.8	29.68	752.6	55.8	13.2		S			5		8ck;d		WSW; 8	0.013	0.33	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.13	739.9	29.65	753.1	54.8	12.7		S			6		10					Misty	Rev. Stephen Whitty
Oxford, Radcliffe Obs'y			29.77	756.1	58	14.4		SSW			2		10					Gloomy	F. Lucas
Plymouth	29.72	754.9	29.80	756.9	57.6	14.2		SW			4		10					Raining	John Merrifield.
Roche's Point	29.46	748.3	29.50	749.3	58	14.4		SW			6		10					Raining	W. Kennedy.
Saint Ann's Head	29.51	749.5	29.60	751.8	58	14.4		SSW			6		10					Raining	John C. Walker.
Sandwick Manse, (Orkneys)			29.26	743.2	48.5	9.2		S	19	8.5			10					Overcast	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.77	755.1	65.8	18.8		NE			1		8			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.35	745.5	29.59	751.6	53.9	12.2		SW			3		6			0.04	1.0	D. clouds	W. F. Cooper.
Silloth Rectory	29.28	743.7	29.31	744.5	56.2	13.4	92	SSW			5		10			0.260	6.35	Raining	Rev. F. Redford, M. A.
Stonyhurst, Observatory					53.0	11.7		S			4		10					Drizzling	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.18	741.2	50	10.0		SW			5		10					Raining	John Smith.
Stratfield Turgiss	29.61	752.1	29.82	757.4	57.5	14.2		S			2		10					Squally	Rev. C.H. Griffith, F.M.S.
Thurso			29.24	742.7	50	10.0		SSE			2		8					Gloomy	John Trotter.
Truro, Royal Institution			29.86	758.4	55	12.8		NW			6		10					Raining	W. Newcombe.
Valencia, Observatory			29.40	746.7	57.6	14.2		SW	51	22.8			10					Squally	The Staff.
Sub-Series.																			
Calf of Man, (Isle of Man)					50	10.0		SW			4		10			0	0		Henry Mercer.
Cape Good Hope, Obs'y	29.95	760.7	29.99	761.7	72.0	22.0	77	SSE	16	7.2		9	8						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.46	748.3	45.0	7.2	87	NW			3		8n			0.08	2.0	Squally	Francis Abbott, F.R.A.S
Leith, Restalrig Park			29.34	745.2	53.0	11.7		W			2		10k			0.09	2.3	Showery	Andrew Gibb.
Mauritius, Observatory	29.63	757.7	30.02	762.4	77.1	25.1	68	ENE	17.5	7.8		0	8		E	0.06	1.5	Squally	C. Meldrum.
Melbourne, Observatory	29.89	759.2	29.98	761.5	51.0	10.6	73	NW	9	4.0			10			0.14	3.6	Dull	R. L. J. Ellery.
Monach L'ti-house, (Hebrides)			29.30	744.2	52	11.1		SW			4		10			0	0		J. Youngclause.
North Unst, (Shetland Is.)			29.27	743.4	50	10.0		SSW			7	8	10	SW		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Probably 29.96 in., and 761.0 mm.

MARINE SERIES.

VESSELS.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. 0—10.	Clouds. Direction. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria, N. 50° 47′, W. 19° 30′			29.60	751.8	53	11.7	WNW			6	7	W	*25	SW; WNW	Showery	Capt. W. Watson.
S. S. Batavia																Capt. J. E. Monland.
Ship Camperdown																Capt. A. T. Miller.
Brig Catherine, N. 48° 50′, W. 28° 15′			29.91	759.7	52	11.1	W			5	6		4	Confused	D. clouds	Capt. Adam Smith.
Barque Celeste																Capt. D. F. McKechnie.
S. S. Hibernia																Capt. W. R. Cato.
Barque Maroon																Capt. A. T. Brown.
Ship Mikado																Capt. C. C. Prehn.
S. S. Seine																Capt. H. Manning.
Barque Sorata																Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			29.47	748.5	58	14.4	WSW			6	10				Showery	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5			67.1	19.5	90	E			1	5ck		E		0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.76	755.9	29.81	757.1	46.2	7.9	85	SE			7		10						
Fanöe	29.68	753.9	29.70	754.4	49.5	9.7	98	W			2		10						
Godthaab, (Greenland)	29.40	746.8	29.45	747.9	18.0	— 7.8	66	NNE			6		0						
Stykkisholm, (Iceland)	28.74	729.9	28.78	731.0	34.0	1.1	92	NE			7		10					Snowing	
Thorshavn, (Fardöe)	28.96	735.5	28.99	736.4	48.6	9.2	88	SW			5		7					Raining	
Vestervig	29.47	748.4	29.63	752.7	47.1	8.4	100	SW			2		10					Foggy	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the coöperation of the Director of the Paris Observatory, and the respective observers.

Alençon, Normal School	29.49	749.0	30.04	763.0	55.4	13	89	SW			4		10		NW	Blank	Blank	Covered	Collignon, Director.
Amiens, Normal School	29.85	758.1	29.96	760.9	64.0	17.8	72	WSW			2		2		W	0.236	6.0	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	30.01	762.2	30.09	764.2	59.0	15	78	N			1		0			0.220	5.6	Very clear	Mr. Giraud, Director.
Bar-sur-Seine	29.48	748.9	30.05	763.2	59.0	15.0	82	N			2		10		NW	0.532	13.5	Covered	C. Saillard.
Beaumette Obs'y (Angers)	29.90	759.4	30.07	763.6	60.1	15.6	91	SW	4.3	1.9					SW	0.429	10.9		Albert Cheux.
Beauvais	29.72	755.0	30.04	763.0	58.5	14.7	76	SW			2		8		NW	0.443	11.25	Very cloudy	Normal School.
Besançon	29.18	741.1	30.07	763.7	56.5	13.6	93	S			3		10			0	0	Covered	Normal School.
Bourg-en-Bresse	29.25	743.0	30.17	766.4	55.2	12.9	98	SE			2					0.492	12.5	Misty	Normal School.
Bourges, Normal School	29.50	749.2	30.04	763.1	60.4	15.8	93	WSW			2		10		WSW	0.24	6.	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.69	754.0	29.91	759.6	59.9	15.5	96	SW			4		10		SW	0.797	20.25	Foggy	The Staff.
Carcassonne, Normal School	29.74	755.5	30.15	765.9	63.0	17.2	98	W			1		2		W	0	0	Slightly cl'dy	Vateau, Director.
Caen	29.91	759.8	29.98	761.6	60.8	16	85	NNW			4		8		NNE	0.20	5.	Very cloudy	Normal School.
Chartres, Normal School	29.47	748.4	30.02	762.6	64.0	17.8	86	SE			2		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.71	754.5	30.02	762.5	63.7	17.6	71	SW			2		5k		SW	0.512	13.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.73	729.7	30.06	763.4	66.9	19.4	65	W			3		8		W	0.094	2.4	Very cloudy	Alluard, Director.
Commercy, Normal School	29.16	740.7	30.03	762.8	56.5	13.6	80	WNW			2		5kn		WNW	0.453	11.5	Partly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	28.97	735.8	30.11	764.8	59.5	15.3	76	NW			4		8		NW	0.059	1.5	¾ covered	[illegible]. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	29.91	759.6	30.12	765.0	60.8	16	96	W			1		10			1.30	33.	Covered	Mouillot, Director.
Le Mans, Normal School	29.76	755.9	30.07	763.7	58.5	14.7	91	W			4		8		W	0.55	14.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.17	740.9	30.08	764.1	56.3	13.5	95	SW			1		10			0.47	12.	Covered	Pin, Director.
Lorient, Naval Observatory	29.96	761.0	30.06	763.5	61.9	16.6		SW			3		10			0.028	0.7	Covered	T. Carré, Director.
Mâcon, Normal School	29.38	746.3	30.04	763.0	52.9	11.6	95	S			2		10			0.898	22.8	Covered	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.10	739.2	30.16	766.0	55.4	13	93	SW			2		2		NE	0.35	9.	Slightly cl'dy	Normal School
Nismes, Normal School	29.96	760.9	30.16	766.0	61.2	16.2	72	N			1		5		N	0.285	7.25	Cloudy	Boyer, Director.
Orleans, Normal School	29.52	749.9	29.91	759.6	61.5	16.4	83	W			2		5		W	0.55	14.	Cloudy	Bernard, Director.
Paris, Observatory	29.78	756.4	30.02	762.4	61.3	16.3	70	W			1		6ck		W	0.513	13.03	Cloudy	National Observatory.
Privas	29.06	738.2	30.13	765.4	55.4	13	66	Calm			0		10		N	0	0	Covered	Normal School
Rochefort, Naval Obs'y	30.11	764.8	30.14	765.6	62.6	17.0	90	W			3		10		W	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.91	759.6	29.99	761.8	60.8	16.0	75	SW			2		2		W	0.453	11.5	Slightly cl'dy	F. Lucard, Director.
Tarbes, Normal School	29.22	742.3	30.31	769.8	62.6	17	38	W			1		5		W	0	0	Cloudy	T. Hugues, Director.
Villefranche	29.38	746.2	30.10	764.4	55.6	13.1	94	SE			2		10		NW	0.795	20.2	Covered	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.6	29.82	757.3	81.0	27.2										0.24	6.		L'Abbé Marchési.
Marseilles, Observatory			30.05	763.2	61.2	16.2	75	W			2		7			0.079	2.00	Very cloudy	The Staff.
Mont-Louis	25.04	636.1	30.35	771.0	56.7	13.7	61	WSW	14.9	6.66			7		NW	0.020	0.5		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	29.74	755.3	30.01	762.3	61.9	16.6	73	W			2		8		W	0.622	15.8		Marié-Davy, Director.
Perpignan			30.14	765.5	68.0	20.0	69	NW	18.6	3.33			8		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.48	545.5			38.1	3.4		NW			2		10					Rainy	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.78	578.6			42.8	6.0		NW			1		10			1.138	28.9	Rainy	Gen'l de Nansouty.
Saint Maur, (near Paris)	29.86	758.4	30.02	762.6	64.0	17.8	70	WSW			1		5k		W	0.079	2.0		E. Renou.
Toulouse, Observatory	29.52	749.8	30.25	768.3	63.9	17.7	78	WNW			4		9			0.185	4.7	Rainy	The Staff.
Tours	29.88	758.9	30.08	763.9	61.2	16.2	89	W			2		5		W	0.576	14.7		C. Marquet.
Versailles, (near Paris)																0.600	15.24		Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.15	765.9	30.18	766.6	54.1	12.3	87	W	5.4	2.4			10n			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,36[illegible] m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.70	754.4	29.87	758.7	47.3	8.5	83	S			2		10			0.058	1.47	Raining	Prof. Arndt.
Breslau	29.45	747.9	29.98	761.4	46.6	8.1	81	SSE			3		8			0	0		Royal University Obs'y.
Carlsruhe	29.55	750.6	29.99	761.7	55.0	12.8	91	SW			2		6			0.331	8.4		Albert Senz.
Cassel	29.33	745.0	29.94	760.4	56.8	13.8	67	WNW			5		4	W		0.124	3.16		Dr. H. Möhl.
Crefeld	29.73	755.2	29.89	759.3	57.9	14.4	77	W			4		6k			0.87	22.		Director Lose.
Emden	29.81	757.2	29.85	758.1	54.7	12.6	85	W			0		0			0.657	16.7		Prof. Prestel.
Frankfort on the Main	29.63	752.7	30.00	762.0	58.6	14.8	67	WSW			1		3			0.346	8.8		Physical Society.
Friedrichshafen	28.60	726.4	30.05	763.2	49.6	9.8	95	S					10	W		0.091	2.3		M. Wilhelm.
Hamburg	29.72	754.9	29 79	756.7	51.1	10.6	99	Calm			0		10			0.394	10.0	Foggy	Captain F. Hegemann.
Kiel	29.75	755.6	29.76	756.0	48.0	8.9	98	SSW			2		10			0.299	7.61		Prof. G. Karsten.
Königsberg, (Prussia)	29.99	761.7	30.07	763.8	46.0	7.8	88	SE										Cloudy	Prof. E. Luther.
Köslin			29.92	759.9	44.4	6.9		SE			6		3			0	0		H. Müller.
Leipsic, Observatory	29.48	748.8	29.91	759.6	46.0	7.8	100	S			2		10			0.039	1.0	Rain and fog	Prof. Bruhns.
Memel, Naval School	30.09	764.2	30.13	765.4	46.0	7.8	86	SE			1-2		10cs						Reinbrecht von Skalweit.
Neufahrwasser	30.02	762.6	30.04	763.0	47.1	8.4	86	SE			2		10			0	0	Dust-haze	A Lothes.
Posen	29.72	754.9	30.02	762.5	46.8	8.2	83	SE			5		10			0.031	0.8	Cloudy	Dr. Magener.
Strassburg Obs., (in Alsace	29.47	748.6	30.02	762.5	57.0	13.9	89	SW			1		10	W		0.322	8.17		Dr. Schur.
Stuttgart	29.01	736.8	29.94	760.5	57.2	14.0	81	W			2		9	W		0.102	2.6	Raining	Prof. Schoder.
Treves, (Trier)	29.35	745.6	29.87	758.8	59.7	15.4	67	W			3		6			0.037	0.95	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.44	722.3	29.95	760.6	49.3	9.6	95	W			2		10s		W	0.240	6.1	Raining	Dr. Von Bebber.
Wustrow, Naval School	29.84	757.9	29.88	758.9	45.7	7.6	89	SE			4		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedricasnafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens

Athens	29.43	747.4	29.82	757.4	59.5	15.3		NE										Cloudy	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.89	759.3	29.94	760.6	84.2	29.0	62	WSW	16.0?	7.2?			1			0	0	D. clouds	
Deesa	29.45	748.9	29.96	760.9	87.8	31.0	24	Calm					0			0	0	Blue sky	
Bombay	29.84	758.0	29.88	759.0	84.7	29.3	62	NW	12.0	5.4			0			0	0	Blue sky	
Poona	27.89	708.3	29.88	759.0	80.9	27.2	49	E					1			0	0	D. clouds	
Lahore	29.24	745.1	29.99	761.3	76.9	24.9	46	Calm	1.2	0.5			1			0	0		
Belgaum	27.37	695.2	29.93	760.2	72.9	22.7	82	Calm					9			0.70	17.8	Raining	
Bangalore																			
Roorkee	29.05	737.9	29.96	760.8	80.0	26.7	38	Calm	2.0	0.9						0	0		
Agra	29.36	745.9	29.93	760.2	82.8	28.2	43	W								0	0		
Trichinopoly																			
Nagpur	28.90	734.1	29.96	760.9	75.9	24.4	52	Calm	1.9	0.8			9			0	0	D. clouds	
Madras																			
Lucknow	29.59	751.6	29.97	761.1	79.3	26.3	60	Calm	0.5	0.2			8	E		0	0	D. clouds	
Allahabad	29.65	753.0	29.96	761.0	76.7	24.8	59	Calm	0.3	0.1			3			0	0	D. clouds	
Patna	29.77	756.2	29.96	760.9	79.5	26.4	52	Calm	0.8	0.4			6			0	0	D. clouds	
Hazaribagh	27.94	709.6	29.96	761.0	76.3	24.6	58	N	2.3	1.0			9			0	0		
Cuttack	29.87	758.7	29.95	760.8	81.8	27.7	71	ESE	3.6	1.6			3			0	0	D. clouds	
Calcutta (Alipore)	29.94	760.4	29.96	761.0	79.5	26.4	80	E	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.57	751.2	29.97	761.1	79.3	26.3	62	NNW	0.7	0.3			0			0	0	Blue sky	
Chittagong	29.84	758.0	29.94	760.4	81.9	27.7	75	NNW	7.6	3.4			0			0	0	Gloomy	
Sibsagar	29.65	753.2	29.99	761.8	78.1	25.6	78	E	1.1	0.5			10	SW	SW	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.64	727.4	30.02	762.4	79.0	26.1	45	NE	1.6	0.7			7	NW		0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.19	563.7	30.07	763.8	39.9	4.4	82	E			2		8	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.15	562.7	30.09	764.2	36.7	2.6		NNW			2		10			0	0		Signora Ernesta Manfredi.
Udine	29.60	751.7	30.01	762.3	52.3	11.3	54	Calm	0	0			10			0	0		Prof. Giovanni Clodig.
Padua	29.88	758.9	29.99	761.7	53.8	12.1	64	N	0	0			7	NW		0	0		Prof. Dott. Lorenzoni.
Vicenza	29.80	756.8	29.99	761.8	54.3	12.4	61	NE	0	0			1	N		0	0		Conte Alm. Da Schio.
Verona	29.78	756.4	30.00	762.1	61.2	16.2	54	NE	0	0			3			0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	28.98	736.1	30.02	762.6	56.3	13.5	61	S			4		3			0	0		Prof. Giuseppe Calza
Milan	29.54	750.2	30.07	763.6	54.7	12.6		SW			2		2			0	0		Ab. Gio. Capelli.
Pavia	29.69	754.2	30.04	763.1	50.2	10.1	90	S			1		8	SW		0	0		Prof. Gio. Cantoni.
Moncalieri	29.13	739.8	30.05	763.3	52.5	11.4	80	SSW	0	0			3	SE		0	0		Prof. P. F. Denza.
Mondovi	28.12	714.1	30.05	763.2	51.6	10.9	68	NW			4		3			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.80	756.8	30.02	762.4	61.9	16.6	63	ENE			2		7	SE		0	0		Prof. L. Vassallo.
Genoa	29.84	758.0	30.01	762.3	59.0	15.0	76	Calm	0	0			10	S		0.036	0.9		Prof. G. M. Garibaldi.
Piacenza	29.77	756.1	30.02	762.6	52.5	11.4	79	NW	0	0			3			0	0		Dott. G. Manzi.
Parma	29.70	754.3	30.03	762.7	55.0	12.8	65	WNW			4		9			0	0		Prof. P. Pigorini.
Florence	29.78	756.3	30.04	762.9	59.4	15.2	49	E			4		10			0	0		Cav. F. Meucci.
Leghorn	29.93	760.2	30.02	762.4	59.2	15.1	74	SE	1.3	0.6			10	W		0	0		Prof. P. Monte.
Siena	28.82	732.0	30.08	763.9	57.2	14.0	57	NW	0	0			7	NW		0	0		Prof. L. Toscani.
Urbino	28.49	723.7	30.07	763.7	53.8	12.1	56	S			2		7			0	0		Prof. P. Serpieri.
Pesaro	29.96	761.0	30.01	762.3	56.3	13.5	71	N	9.8	4.4			10			0	0		Prof. Luigi Guidi.
Ancona	29.91	759.6	30.01	762.3	57.0	14.0	53	WSW			4		10			0	0		Prof. F. DeBosis.
Grosseto	29.96	760.9	30.07	763.8	62.6	17.0	50	NNW			2		7	SE		0	0		Avv. P. Ponticelli.
Rome	29.83	757.7	30.01	762.2	61.9	16.6	47	N	0.7	0.3			9			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.83	757.7	30.03	762.8	61.9	16.6	35	NNE			2		9	ENE		0	0		Prof. L. Palmieri.
Lecce					60.8	16.0	67	WNW	16.8	7.5			4	N		0	0		Prof. C. De Giorgi.
Cosenza	29.09	738.9	29.95	761.6	59.7	15.4	70	SE	0	0			5			0	0		Prof. F. D. Conti.
Cagliari	29.81	757.1	30.00	761.9	67.1	19.5		NW			4		8	N		0	0		Prof. A. Pacinotti.
Riposto, (Sicily)					65.1	18.4	46	NNE			8		9			0.012	0.3		Prof. F. Cafiero.
Palermo	29.75	755.6	30.00	762.1	62.2	16.8	53	WNW	9.4	4.2			9			0.004	0.1		Prof. G. Cacciatore.
Caltanissetta	27.99	711.0	29.93	760.2	57.6	14.2	47	WNW			6		5	S		0	0		Prof. A. Pagani.
Syracuse	29.86	758.5	29.94	760.4	64.4	18.0	51	WNW			2		8	NW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.52	749.7	30.07	763.8	59.5	15.3	45	ESE	1.3	0.6			7			0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,513.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.12	765.0	30.23	767.6	47	8.3	85									0	0	Clear	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	23.11	587.1	30.15	765.9	57.9	14.4	86	Calm	0	0		0	5k		SE	0.08	2.1	Cloudy	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

Note.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,230 m., or 7,312.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,593 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,188.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.92	760.0	29.92	760.0	55.8	13.2		WSW			4					0.287	7.3		
Groningen	29.76	756.0	29.82	757.4	55.2	12.9		WNW			2					0.567	14.4		
Helder	29.82	757.5	29.82	757.5	55.2	12.9		SW			2					0	0		
Hellevoetsluis			29.87	758.7	55.4	13.0	88	SW			4								
Utrecht	29.84	758.0	29.89	759.2	58.1	14.5	78	WSW			2		5			0.224	5.7	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.46	748.2	29.51	749.6	51.1	10.6	68	S	18.3	8.2			4			0.146	3.7		
Brönö	29.48	748.7	29.52	749.7	42.8	6.0	65	S	29	13			9			0	0		
Christiania	29.60	751.9	29.75	755.7	43.5	6.4	88	SSE	9	4			10			0.118	3.0	Light rain	
Tromsö	29.60	751.8	29.64	752.9	38.1	3.4	63	SW	11	5			8			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra, (Azores)	29.91	759.8	30.10	764.6	67.8	19.9	96	S	6.3	2.8			9			0	0		Dr. J. A. Sampaio.
Campo Major	29.25	743.0	30.25	768.3	75.2	24.0	38	NNE	2.5	1.1			4			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.15	765.7	30.22	767.5	75.4	24.1	60	SE	3.8	1.7			1			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.90	759.5	30.26	768.5	67.6	19.8	72	NE	4.9	2.2			1			0	0		The Staff.
Ponta Delgada, (Azores)	30.13	765.2	30.20	767.0	73.4	23.0	83	SSW	6.3	2.8			4			0.016	0.4		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 0 m., p. m

NAVAL SERIES. VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Warsaw	29.62	752.4	30.05	763.2	46.8	8.2	83	ESE	11	5			10						Astronomical Obs.
Wilna	29.79	756.6	30.22	767.5	48.6	9.2	86	SE	2	1			9						Astronomical Obs.
Dorpat	30.04	763.0	30.29	769.4	44.2	6.8	82	S	4	2			7						Prof. Dr. Weihrauch
St. Petersburg	30.26	768.7	30.28	769.1	45.3	7.4	78	SSW	4	2			10						Central Physical Obs.
Kuopio	29.84	758.0	30.17	766.4	37.9	3.3	100	S	7	3			10					Raining	Ch. Forsten.
Kieff	29.50	749.3	30.15	765.7	49.5	9.7	69	ESE	4	2			8						Physical Cabinet.
Nikolaiev	29.98	761.5	30.05	763.3	58.3	14.6	56	E	22	10			0						Kurdakof.
Kertch	29.92	759.9	29.94	760.4	61.2	16.2	77	ENE	9	4			4						Lagorio.
Moscow	29.88	758.9	30.45	773.4	41.5	5.3	91	S	7	3			7						Meteorological Obs.
Lugan	29.97	761.1	30.17	766.2	55.0	12.8	57	ENE	18	8			0						Meteorological Obs.
Archangel	30.27	768.8	30.29	769.3	35.8	2.0	100	SE	13	6			10						Ogorodnikof.
Tiflis	28.65	727.7	30.06	763.5	59.0	15.0	78	Calm	0	0			10						Physical Observatory.
Astrakhan	30.28	769.2	30.20	767.1	56.7	13.7	38	ENE	4	2			1						Sebastianof.
Kasan	30.28	769.0	30.56	776.3	32.5	0.3	85	Calm	0	0			10						Physical Cabinet.
Orenburg																			Tschernischef.
Ekaterinburg	29.62	752.4	30.63	777.9	30.0	— 1.1	69	Calm	0	0			1						Meteorological Obs.
Nukuss	29.86	758.5	30.10	764.4	56.8	13.8	58	NNE	0	0			9						
Kasaly																			Bobrof.
Tashkend	28.56	725.5	30.28	769.0	54.7	12.6	89	W	4	2			10					Foggy	Michelson.
Barnaul	29.69	754.1	30.25	768.3	24.8	— 4.0	77	W	4	2			10					Snowing	Meteorological Obs.
Yeniseisk	29.65	753.2	29.80	756.9	20.8	— 6.2	93	Calm	0	0			1						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	30.15	765.9	30.30	769.5	49.6	9.8	70	Calm	0	0			2						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					26.6	— 3.0	89	Calm	0	0			10						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306.4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	28.06	712.6	30.24	768.2	70.2	21.2	48	N	1.9	0.83		2	0	NE		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.95	760.8	30.04	762.9	78.1	25.6	85	Calm	0	0		7cics	0	NNE		0	0	Fair	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.13	765.3	30.23	767.8	74.1	23.4	60	NW	6.5	2.9		2	5	NW	SE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.88	759.0	80.2	26.8	84	SE	0	0		5k	2kn	E	E	0.423	10.75	Clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the cöoperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.08	763.9	30.11	764.9	32.7	0.4	.....	SE	.....	.....	4	.....	4	.....	.....	0	0	.....	
Umea	29.98	761.5	30.03	762.8	39.2	4.0	100	SW	.....	.....	2	.....	10	.....	.....	0.252	6.4	.....	
Hernosand	29.94	760.5	29.99	761.8	38.8	3.8	80	S	.....	.....	4	.....	10	.....	.....	0	0	.....	
Stockholm	29.82	757.4	30.00	761.9	44.6	7.0	88	S	.....	.....	4	.....	10	.....	.....	0.012	0.3	Foggy	
Wisby	29.98	761.4	30.04	762.9	46.4	8.0	75	S	.....	.....	4	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.91	759.8	29.99	761.7	42.8	6.0	97	SSE	11.2	5.0	.....	.....	10	.....	SSW	0.015	0.37	.....	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.68	728.5	30.11	764.7	54.7	12.6	85	NNW	.....	.....	1	.....	7	.....	.....	0.291	7.4	Cloudy.	The Observatory.
Zurich	28.42	721.8	30.07	763.6	51.1	10.6	94	W	.....	.....	1	.....	10	.....	.....	0.551	14.0	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +2.4 mm; Thermometer, +2.5 cent.; Relative Humidity, +11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.82	757.4	63.0	17.2	85	NNE	13	6.0	.....	.....	7	.....	NE	0	0	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Salonica	.....	.....	29.94	760.4	64.0	17.8	.....	SE	.....	.....	1	.....	10	.....	.....	Blank	Blank	.....	B. Stefanides.
Valona	.....	.....	29.93	760.2	61.0	16.1	.....	W	.....	.....	1	.....	2	.....	.....	0.12	3.	Slightly cl'dy	A. Bertrand.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Imperial Observatory.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.95	760.8	79.0	26.1	53	SW	.....	.....	1	.....	7cs	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.55	750.6	29.62	752.3	43.0	6.1	71	W	9.7	4.3	.....	0	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	30.04	763.0	43	6.1	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.68	753.9	38	3.3	81	SW	5	2.2	.....	8k	2ks	SW	SW	0.05	1.3	Fair	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	29.72	754.9	42	5.6	68	W	13	5.8	.....	0	0	.....	.....	0.020	0.51	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.79	756.7	29.98	761.5	40.0	4.4	78	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	29.59	751.6	29.60	751.8	39	3.9	81	W	.....	.....	2	.....	.....	.....	.....	0.09	2.3	Gloomy	H. A. Johnson.
Esquimault, B. C.	30.31	769.9	30.36	771.1	35.1	1.7	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	.....	.....	29.64	752.8	38	3.3	74	SW	32	14.3	.....	5ck	5s	W	W	0.35	8.9	Cloudy	J. McWilliams.
Fredericton, N. B.	29.74	755.4	29.80	756.9	41.1	5.1	65	NW	8	3.6	.....	ck	0	W	.....	0.30	7.6	Fair	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.78	756.4	32	0.0	98	W	6	2.7	.....	5k	5n	W	W	0.020	0.51	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A.
Granton, Ontario	29.01	736.8	30.16	766.1	34	1.1	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S.	29.65	753.1	29.79	756.7	43	6.1	84	W	6	2.7	.....	0	0	.....	.....	0.072	1.83	Clear	F. Allison, M. A.
Hamilton, Ontario	29.81	757.2	30.20	767.1	36.7	2.6	80	SW	.....	.....	1	2c	.....	SW	.....	0	0	Clear	Geo. Dickson, M. A
Heart's Content, N. F.	29.62	752.3	29.65	753.1	42	5.6	91	SW	.....	.....	4	.....	10	.....	.....	0.02	0.5	Raining	E. Weedon.
*Kingston, Ontario	29.72	754.9	30.10	764.5	39	3.9	87	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	29.58	751.3	29.68	752.6	46.0	7.8	84	W	8	3.6	.....	3k	.....	W	.....	0.14	3.6	Fair	C. H. Rigby.
*Montreal, Quebec	29.72	754.9	29.93	760.2	42	5.6	74	W	18	8.0	.....	0	0	.....	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.37	746.0	30.08	764.0	35	1.7	95	W	8	3.6	.....	2ck	0	W	.....	0.14	3.6	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.36	745.7	30.14	765.5	36.7	2.6	90	Calm	.....	.....	0	0	0	.....	.....	0	0	Bright	J. F. Jeffers, B. A.
Port Dover, Ontario	29.44	747.8	30.15	765.8	38	3.3	81	W	4	1.8	.....	10k	0	W	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S.	29.68	753.9	29.73	755.1	45.5	7.5	.....	NW	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant
Port Stanley, Ontario	29.49	749.0	30.16	766.1	36	2.2	88	W	5	2.2	.....	2k	0	NW	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.55	750.6	29.88	758.9	41	5.0	74	SW	20	8.9	.....	5k	10n	SW	.....	0.12	3.0	Fair	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.56	750.8	30.03	762.7	36	2.2	95	NW	10	4.5	.....	0	2s	.....	NW	0.04	1.0	Fair	W. H. McIntyre.
St. John, N. B.	29.66	753.4	29.82	757.4	39	3.9	91	S	2	0.9	.....	5ck	0	.....	.....	0	0	Fine	G. Murdock, C. E.
*Saugeen, Ontario	29.38	746.2	30.09	764.3	41	5.0	82	NW	9	4.0	.....	5k	0	W	.....	Inap.	Inap.	Fair	K. Stewart.
Stayner, Ontario	.....	.....	30.08	764.0	42	5.6	74	NW	9	4.0	.....	2ck	0	W	.....	0.01	0.3	Fair	R. J. Cole.
Stratford, Ontario	28.82	732.0	30.14	765.5	35.3	1.8	96	NW	1.5	0.7	.....	2c	3s	NW	NW	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B.	29.64	752.8	29.67	753.6	49	9.4	72	W	17	7.6	.....	5ck	5ks	NW	NW	0.14	3.6	Fair	T. C. Hill.
*Toronto, Ontario	29.72	754.9	30.12	765.0	35	1.7	87	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S.	29.70	754.4	29.80	756.9	44.0	6.7	68	SW	3	1.3	.....	2cs	.....	.....	.....	0	0	Clear	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	40.0	4.4	100	S	.....	.....	.....	10k	10s	.....	.....	0.04	1.0	Cloudy	John Delany
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rainfall or melted snow in the past 24 hours. Inches.	Rainfall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.81	757.2	30.04	763.0	42	5.6	83	Calm	0	0	.....	2k	Fog	Calm	Calm	0	0	Fair	
Alpena, Michigan	29.44	747.8	30.11	764.8	34	1.1	79	SW	5	2.2	.....	.....	10s	.....	SW	0	0	Cloudy	
Atlantic City, New Jersey	30.04	763.0	30.06	763.5	57	13.9	87	N	15	6.7	.....	.....	10s	.....	W	0	0	Cloudy	
Augusta, Georgia	29.95	760.7	30.13	765.3	65	18.3	97	Calm	0	0	.....	.....	10n;fg	.....	SW;SE	0.07	1.8	Light rain	
Baltimore, Maryland	30.06	763.5	30.11	764.8	56	13.3	80	N	8	3.6	.....	.....	10n	.....	NE	0.02	0.5	Light rain	
Barnegat, New Jersey	30.05	763.3	30.08	764.0	53	11.7	79	N	27	12.1	.....	.....	10n	.....	N	Inap.	Inap.	Light rain	
Bismarck, Dakota	28.14	714.7	29.84	757.9	40	4.4	32	W	17	7.6	.....	.....	10s	.....	NW	0	0	Cloudy	
Boise City, Idaho	27.31	693.7	30.08	764.0	24	— 4.4	80	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.84	757.9	30.00	762.0	48	8.9	63	W	8	3.6	.....	7cs	Fog	W	.....	Inap	Inap.	Fair	
Brackettville, Texas	28.83	732.3	29.84	757.9	62	16.7	77	NW	6	2.7	.....	.....	10ks	.....	Calm	0.10	2.5	Cloudy	
Breckenridge, Minnesota	28.91	734.3	29.92	760.0	37	2.8	62	SW	20	8.9	.....	.....	10ks	.....	W	0	0	Cloudy	
Brownsville, Texas	29.80	756.9	29.87	758.7	80	26.7	86	SE	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
Buffalo, New York	29.38	746.2	30.11	764.8	42.0	5.6	83	W	5	2.2	.....	0	5s	.....	Calm	0	0	Fair	
Burlington, Vermont	29.71	754.6	29.97	761.2	49	9.4	59	W	8	3.6	.....	2c	5s	Calm	W	0	0	Fair	
Cairo, Illinois	29.77	756.1	30.17	766.3	52	11.1	72	N	10	4.5	.....	.....	10s	.....	Calm	0.56	14.2	.....	
Camp Grant, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Camp Verde, Arizona	26.54	674.1	30.03	762.7	50	10.0	72	SE	.....	.....	.....	0	8n	.....	SE	0.17	4.3	Light rain	
Campo, California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cape Hatteras, N. Carolina	30.04	763.0	30.05	763.3	67	19.4	90	Calm	0	0	.....	5cs	5s	SW	W	0.06	1.5	Cloudy	
Cape Henry, Virginia	30.02	762.5	30.04	763.0	63	17.2	83	SW	8	3.6	.....	.....	10s	.....	SW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.09	764.3	30.10	764.5	70	21.1	90	Calm	0	0	.....	2c	2ks	W	SW	0.18	4.6	Fair	
Cape May, New Jersey	29.99	761.7	30.02	762.5	62	16.7	88	W	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Charleston, South Carolina	30.07	763.8	30.14	765.5	68	20.0	94	N	2	0.9	.....	2ck	5s	W	Calm	0	0	Fair	
Cheyenne, Wyoming	24.12	612.6	30.06	763.5	23	— 5.0	93	NW	8	3.6	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Chicago, Illinois	29.49	749.0	30.21	767.3	36	2.2	80	N	4	1.8	.....	5cs	Fog	N	Calm	0	0	Fair	
Cincinnati, Ohio	29.48	748.8	30.14	765.5	49	9.4	71	NE	6	2.7	.....	5ck	Fog	N	Calm	0.09	2.3	Fair	
Cleveland, Ohio	29.44	747.8	30.18	766.6	47	8.3	62	W	8	3.6	.....	5k	0	Calm	.....	0	0	Fair	
Concho, Texas	.....	.....	.....	.....	48	8.9	92	N	8	3.6	.....	8cs	0	N	.....	0.23	5.8	Cloudy	
Corsicana, Texas	29.54	750.3	30.01	762.2	59	15.0	100	NE	7	3.1	.....	.....	10s	.....	NE	1.10	27.9	Cloudy	
Davenport, Iowa	29.59	751.6	30.26	768.6	34	1.1	79	N	7	3.1	.....	1c	0	Calm	.....	0	0	Clear	
Denison, Texas	29.29	744.0	30.09	764.3	53	11.7	100	NE	10	4.5	.....	.....	10ks	.....	NE	0.93	23.6	Cloudy	
Denver, Colorado	24.88	631.9	30.10	764.5	25	— 3.9	88	Calm	0	0	.....	.....	10s	.....	Calm	0.20	5.1	Cloudy	
Detroit, Michigan	29.48	748.8	30.18	766.6	37	2.8	80	W	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dodge City, Kansas	27.60	701.0	29.96	761.0	41	5.0	83	NE	10	4.5	.....	.....	10s	.....	NE	0	0	Cloudy	
Dubuque, Iowa	29.48	748.8	30.22	767.6	32	0.0	79	W	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Duluth, Minnesota	29.23	742.4	29.93	760.2	32	0.0	79	NW	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Eagle Pass, Texas	29.19	741.4	29.92	760.0	60	15.6	76	NW	9	4.0	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Eastport, Maine	29.77	756.1	29.84	757.9	44	6.7	67	W	10	4.5	.....	8ck	0	W	.....	0.26	6.6	Fair	
Erie, Pennsylvania	29.38	746.2	30.10	764.5	48	8.9	62	NW	5	2.2	.....	5k	0	NW	.....	0	0	Fair	
Escanaba, Michigan	29.42	747.3	30.10	764.5	30	— 1.1	78	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.26	717.8	29.86	758.4	60	15.6	44	S	.....	.....	.....	8k	0	W	.....	0	0	Fair	
Fort Bayard, New Mexico	23.97	608.8	29.97	761.2	45	7.2	76	Calm	0	0	.....	5cs	0	SW	.....	Inap.	Inap.	Fair	
Fort Craig, New Mexico	25.51	647.9	.....	.....	42	5.6	83	NW	8	3.6	.....	0	5s	.....	NW	0.03	0.8	Fair	
Fort Gibson, Indian Ter	29.56	750.8	30.10	764.5	53	11.7	79	NE	5	2.2	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Fort Griffin, Texas	28.86	733.0	30.16	766.1	47	8.3	92	NW	6	2.7	.....	.....	10n	.....	Calm	0.40	10.2	Light rain	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.89	733.8	30.02	762.5	47	8.3	92	N	10	4.5	.....	.....	10s	.....	NW	0.26	6.6	Cloudy	
Fort Sully, Dakota	28.40	721.3	30.10	764.5	37	2.8	62	NW	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.93	760.2	29.98	761.5	70	21.1	90	E	8	3.6	.....	.....	10s	.....	Calm	2.15	54.6	Threatening	
Grand Haven, Michigan	29.50	749.3	30.16	766.1	44	6.7	67	W	11	4.9	.....	2k	0	W	.....	0	0	Clear	
Indianapolis, Indiana	29.37	746.0	30.17	766.3	42	5.6	83	N	2	0.9	.....	8cs	Sm'e	W	.....	0	0	Fair	
Indianola, Texas	29.94	760.5	29.96	761.0	68	20.0	100	NE	48	21.5	.....	.....	10n	.....	NE	2.87	72.9	Heavy rain	
Jacksboro, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Jacksonville, Florida	30.09	764.3	30.12	765.0	70	21.1	90	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Keokuk, Iowa	29.60	751.8	30.24	768.1	40	4.4	63	N	4	1.8	.....	0	4s	.....	Calm	0	0	Fair	
Key West, Florida	29.99	761.7	30.02	762.5	79.0	26.1	82	E	4	1.8	.....	2c	1ks	NW	SE	0	0	Fair	
Kittyhawk, North Carolina	30.06	763.5	30.09	764.3	63	17.2	100	SW	7	3.1	.....	.....	10s	.....	SW	0	0	Cloudy	
Knoxville, Tennessee	29.10	739.1	30.10	764.5	59	15.0	94	NE	3	1.3	.....	.....	10ks	.....	SW	0	0	Cloudy	
La Crosse, Wisconsin	29.40	746.7	30.16	766.1	35	1.7	70	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	52	11.1	60	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	66	18.9	78	NW	14	6.3	.....	10k	0	N	.....	0	0	Cloudy	
Leavenworth, Kansas	29.40	746.7	30.27	768.8	43	6.1	58	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Los Angeles, California	29.54	750.3	29.88	758.9	44	6.7	67	N	8	3.6	.....	0	0	.....	.....	0.84	21.3	Clear	
Louisville, Kentucky	29.57	751.1	30.14	765.5	51	10.6	86	N	8	3.6	.....	.....	10s	.....	NW	0.14	3.6	Cloudy	
Lynchburg, Virginia	29.36	745.7	30.03	762.7	60	15.6	77	W	1	0.4	.....	.....	10ks	.....	W	0	0	Cloudy	
Maricopa Wells, Arizona	.....	.....	.....	.....	54	12.2	38	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	
Marquette, Michigan	29.30	744.2	30.02	762.5	35	1.7	61	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.40	721.3	30.16	766.1	53	11.7	93	N	4	1.8	.....	.....	10s	.....	.....	0.10	2.5	Foggy	
Memphis, Tennessee	29.77	756.1	30.09	764.3	53	11.7	93	NE	8	3.6	.....	.....	10n	.....	N	1.43	36.3	Light rain	
Milwaukee, Wisconsin	29.52	749.8	30.24	768.1	32	0.0	79	W	6	2.7	.....	1c	Sm'e	.....	.....	0	0	Clear	
Mobile, Alabama	30.00	762.0	30.04	763.0	71	21.7	97	S	3	1.3	.....	.....	10n	.....	S	1.07	27.2	Light rain	
Montgomery, Alabama	29.81	757.2	30.04	763.0	66.5	19.2	94	S	12	5.4	.....	.....	10n	.....	SW	0.46	11.7	Light rain	
Morgantown, West Virginia	29.08	738.6	30.14	765.5	52	11.1	79	Calm	0	0	.....	.....	10s	.....	N	0.16	4.1	Threatening	
Mt. Washington, N. H.	23.58	598.9	29.92	760.0	22	— 5.6	100	NW	60	26.8	.....	.....	Fog	.....	NW	0.15	3.8	Foggy	
Nashville, Tennessee	29.55	750.6	30.08	764.0	61	16.1	94	NW	6	2.7	.....	.....	10s	.....	Calm	1.40	35.6	Cloudy	
New Haven, Connecticut	29.94	760.5	30.06	763.5	52	11.1	72	NW	5	2.2	.....	8ck	2s	Calm	Calm	0	0	Cloudy	
New London, Connecticut	29.99	761.7	30.04	763.0	51	10.6	72	Calm	0	0	.....	8cs	2s	W	SW	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	68	20.0	94	E	12	5.4	.....	.....	10n	.....	Calm	3.72	94.5	Light rain	
Newport, Rhode Island	29.98	761.5	30.03	762.7	51	10.6	72	W	4	1.8	.....	.....	10s	.....	NW	0	0	Threatening	
New York, New York	29.91	759.7	30.09	764.3	53	11.7	66	NW	6	2.7	.....	.....	10n;fg	.....	NW	Inap.	Inap.	Light rain	
Norfolk, Virginia	30.02	762.5	30.08	764.0	61	16.1	100	SW	7	3.1	.....	.....	10s	.....	SW	0	0	Cloudy	
North Platte, Nebraska	27.30	693.4	29.97	761.2	36	2.2	90	N	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Olympia, Washington Ter.	30.24	768.1	30.28	769.1	35	1.7	90	SE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	29.12	739.6	30.25	768.3	35	1.7	85	SW	1	0.4	.....	5k	5s	W	Calm	0	0	Cloudy	
Oswego, New York	29.75	755.6	30.08	764.0	47	8.3	62	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Pembina, Dakota	28.97	735.8	29.81	757.2	32	0.0	89	NW	12	5.4	.....	10k	0	NW	.....	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	30.07	763.8	30.12	765.0	52	11.1	86	NE	8	3.6	.....	.....	10n	.....	N	0.15	3.8	Light rain	
Phœnix, Arizona	.....	.....	.....	.....	57	13.9	30	SW	.....	.....	.....	.....	10ks	.....	S	Inap	Inap.	Threatening	
Pike's Peak, Colorado	17.74	450.6	29.95	760.7	16	— 8.9	83	Calm	0	0	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	
Pioche, Nevada	23.76	603.5	29.53	750.0	25	— 3.9	87	N	9	4.0	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Pittsburg, Pennsylvania	29.30	744.2	30.12	765.0	47	8.3	85	NW	4	1.8	.....	2k	0	W	.....	0	0	Fair	
Port Huron, Michigan	29.45	748.0	30.14	765.5	35	1.7	80	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.87	758.7	29.92	760.0	46	7.8	69	W	8	3.6	.....	8ck;k	Haze	W	.....	0	0	Cloudy	
Portland, Oregon	30.22	767.6	30.32	770.1	38	3.3	90	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.54	623.3	29.90	759.4	42	5.6	35	SE	.....	.....	.....	0	5s	.....	SE	0.37	9.4	Fair	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	74	23.3	85	NE	8	3.6	.....	0	5ks	.....	Calm	0	0	Fair	
Red Bluff, California	29.67	753.6	30.04	763.0	50	10.0	30	N	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.47	748.5	30.10	764.5	40	4.4	82	W	6	2.7	.....	1k	0	W	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.66	753.4	30.26	768.6	32	0.0	100	Calm	0	0			Fog		Calm	0	0	Foggy	
Sacramento, California	29.85	758.2	29.93	760.2	44	6.7	44	N	16	7.2		0	0			0	0	Clear.	
St. Louis, Missouri	29.66	753.4	30.25	768.3	43	6.1	75	N	8	3.6		0	5s		Calm	0	0	Fair	
St. Marks, Florida	30.08	764.0	30.09	764.3	68	20.0	94	Calm	0	0			10s		W	0	0	Cloudy	
St. Paul, Minnesota	29.16	740.7	30.02	762.5	33	0.6	69	SW	10	4.5		0	0			0	0	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.51	647.9	29.84	757.9	41	5.0	48	E	16	7.2		0	0			0	0	Clear	
San Antonio, Texas	29.28	743.7	29.81	757.9	67	19.4	95	E	8	3.6			10ks		E	0.12	3.0	Threatening	
San Diego, California	29.89	759.2	29.96	761.0	48	8.9	70	NE	8	3.6		0	0			0.02	0.5	Clear	
Sandusky, Ohio	29.50	749.3	30.19	766.8	45	7.2	67	N	12	5.4		1c	1k	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.06	763.5	30.08	764.0	53	11.7	66	N	18	8.0			10n		W	Inap.	Inap.	Light rain	
San Francisco, California	29.85	758.2	29.91	759.7	55	12.8	33	N	32	14.3		0	0			0	0	Clear	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	35.5	1.9	95	N	11	4.9			10s		Calm	Inap.	Inap.	Threatening	
Savannah, Georgia	30.04	763.0	30.14	765.5	67	19.4	94	Calm	0	0		5ck	Fog	W		0	0	Fair	
Shreveport, Louisiana	29.87	758.7	30.09	764.3	63	17.2	100	NE	4	1.8			10s		Calm	2.32	58.9	Cloudy	
Smithville, North Carolina	30.11	764.8	30.14	765.5	68	20.0	94	W	3	1.3		0	2ks		W	0.66	16.8	Fair	
Springfield, Massachusetts	29.85	758.2	29.98	761.5	52	11.1	66	Calm	0	0		5ck	0	W		0	0	Fair	
Stanwix, Arizona					55	12.8	38	W				0	5ks		W	0	0	Fair	
Stockton, Texas	27.05	687.1	30.05	763.3	47	8.3	100	NE	8	3.6			10n		NE	0.01	0.3	Light rain	
Thatcher's Island, Mass	29.94	760.5	30.00	762.0	49	9.4	63	W	12	5.4		8cs;k	0	W		0	0	Fair	
Toledo, Ohio	29.48	748.8	30.18	766.6	43	6.1	75	Calm	0	0		0	2s		Calm	0	0	Fair	
Tucson, Arizona	27.40	696.0	29.94	760.5	62	16.7	55	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	30.09	764.3	30.12	765.0	70	21.1	95	Calm	0	0		5cs	Fog	Calm	Calm	0	0	Fair	
Umatilla, Oregon	30.09	764.3			22	--5.6	72	SE	6	2.7		0	0			0	0	Clear	
Vicksburg, Mississippi	29.75	755.6	30.01	762.2	66	18.9	95	NE	2	0.9			10s		NE	1.97	50.0	Cloudy	
Virginia City, Montana	24.44	620.8	29.92	760.0	15	—9.4	72	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.54	750.3	29.92	760.0	35	1.7	80	E	1	0.4		0	0			Inap.	Inap.	Clear	
Washington, D. C.	29.97	761.2	30.07	763.8	59	15.0	76	N	16	7.2			10ks		NE	0	0	Cloudy	
Wickenburg, Arizona					33	0.6	26	N				0	0			Inap.	Inap.	Clear	
Wilmington, N. Carolina	30.02	762.5	30.10	764.5	64	17.8	94	Calm	0	0		0	Fog		Calm	0.34	8.6	Clear	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	25	—3.9	50	NE	10	4.5		0	5s		NE	0	0	Fair	
Wood's Holl, Mass	29.98	761.5	30.03	762.7	52	11.1	66	NE	6	2.7			10s		N	0	0	Cloudy	
Yankton, Dakota	28.91	734.3	30.25	768.3	34	1.1	79	W	7	3.1		8cs	0	W		0	0	Fair	
Yuma, Arizona	29.79	756.7	29.96	761.0	53	11.7	35	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.59	751.6	29.64	752.8	26.5	—3.1	94	SW	4	1.8		4k	5s	SW	SW	0.02	0.5	Threatening	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.96	761.0	29.98	761.5	79	26.1	82	SE	2.4	1.1		8c	0	NW		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	80	26.7	82	Calm	0	0		2c	2s	SE		0	0		James Gall.
Navassa, W. I.	29.84	757.9	29.92	760.0	83	28.3		NE	2	0.9						0	0	Cloudy	F. M. Everett.
St. Thomas, W. I.					85	29.4	71	NE	13	5.8		2c	2k	E		0	0		G. O. Gellich.
Paramaribo, D. Guiana, S. A.			29.98	761.5	83	28.3	79	E			3	4c	5k	E		0	0	Fair	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.17	639.3			68.0	20.0	80	Calm			0		9ks			0	0	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,675 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.1 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard Mare Island, Cal.	29.93	760.2	52	11.1	53	11.7	36	N	23	10.3			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.20	767.1			74	23.3	100	E	7	3.1			10			2.44	62.0			Foggy	
Navy Yard, Portsmouth, N.H	29.99	761.7	54	12.2	43	6.1	75	WSW	3	1.3						0	0			Clear	
Naval Hospital, Yokohama, Japan	30.13	765.3	59	15.0	51	10.6	89	Calm			0		Haze		Calm	0	0			Clear	
Adams, Montevideo, Uruguay	30.22	767.6	59	15.0	57	13.9	69	E			2–3		1		E	0	0	Light	S	D. clouds	
Alert, Nagasaki, Japan	30 29†	769.4†	62	16.7	62	16.7	88	Calm			0		10		S			Smooth		D. clouds	
Alliance, Constantinople, Turkey.	29.92	760.0	66	18.9	65	18.3	78	NE			1–2		3		N&E						
Ashuelot, Tientsin, China	30.30	769.6	58	14.4	54	12.2	61	SE			2		2		Calm			Smooth		D. clouds	
Canonicus, New Orleans, La	30.01	762.2	50	10.0	69	20.6	100	ESE			4		10							Raining	
Colorado, New York, N. Y.	30.15	765.8	61	16.1	60	15.6	53	NW	6	2.7			10		W	0	0			Foggy	
Despatch, Constantinople, Turkey.	29.93	760.2	67	19.4	65	18.3	84	NNE			3		7		NE					Rainy	
Franklin, Norfolk, Va	30.15	765.8	61	16.1	63	17.2	94	SW	7.8	3.5			9		SW	0	0			Cloudy	
Gettysburg, Catania, Italy	29.86‡	758.4‡			69	20.6	95	ESE			1–2		8		Calm	0	0			D. clouds	
Kearsarge, N. 19° 44′, E. 38° 40′	29.90	759 4			90	32.2	73	N			2		3		N			Smooth		D. clouds	
Lackawana, Port Townsend, W. T.	30.38	771.6			45	7 2	84	Calm			0		6		NW			Smooth		D. clouds	
Marion, Smyrna, Turkey	29.79	756.7	70	21.1	70	21.1	66	N			0		9		Calm	Light	Light			D. clouds	
Michigan, Detroit, Michigan	29.65	753.1	58	14.4	40	4.4	73	W			1		0							Clear	
Monocacy, Yokohama, Japan	30.15	765.8	57	13.9	54	12.2	93	N&W			0–1		1			0	0	Smooth		D. clouds	
Monongahela, Gibraltar, Spain	30.37	771.4	70	21.1	70	21.1	70	SE			2		k					Smooth		D. clouds	
New Hampshire, Port Royal, S.C	30.32	770.1			71	21.7	95	Calm	0	0			5		SW	0	0			D. clouds	
Omaha, S. 25° 10′, W. 75° 10′	30.15	765.8	65	18.3	63	17.2	67	SSE	15	6.7			10		S	0	0	Moderate.	S	Cloudy	
Onward, Callao, Peru	30.06†	763.5†	70	21.1	68	20.0	95	SE			1		10					Long	W	D. clouds	
Ossinee, N. 38° 43′ 30″, W. 74° 21′	30.09	764 3	72	22.2	63	17.2	89	SW			2		10		SE			Ground	E	Overcast	
Palos, Shanghai, China	30.20	767.1	65	18.3	62	16.7	94	W			1		10		Calm					Cloudy	
Pensacola, Mare Island, Cal.	30.02	762.5			55	12.8	50	NNW			3–4		0			0	0				
Plymouth, Norfolk, Va	30.35†	770.9†	68	20.0	63	17.2	100	SW			1–2		10		S&W					Misty	
Ranger, Shanghai, China	30.28	769.1			68	20.0	84	WNW			2		10		NW					Overcast	
Rio Bravo, Brownsville, Texas	29.79	756.7			79	26.1	95	SE			1		10		SW					Misty	
Santee, Annapolis, Md.	30.11	764.8	63	17.2	60	15.6	71	NE			3		10		W	0	0			Cloudy	
St. Louis, League Island, Pa	30.01	762.2	56	13.3	56	13.3	87	NNE	8	3.6			10		NNE	0.05	1.3			Raining	
Swatara, Hampton Roads, Va	30.10	764.5			63	17 2	94	SW			2		8		S&W					D. clouds	
Tennessee, Yokohama, Japan	30.22	767.6	63	17.2	54	12.2	93	NW	4	1.8			0					Smooth		Drizzling	
Trenton, Villefranche, France	30.08†	764.0†	68	20.0	65	18.3	68	SE	2	0.9			5		S&E					D. clouds	
Vandalia, Villefranche, France	30.03	762.7	66	18.9	65	18.3	63	SE			1		3		NW					D. clouds	
Wabash, Boston, Mass	30.03	762.7	60	15.6	49	9.4	63	W	4	1.8			9		Calm	0	0			D. clouds	
Wyoming, Washington, D. C.	30.28†	769.1†			66	18.9		Calm			0									Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	OBSERVER.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, N. 33° 39′, E. 136° 33′			30.44*	773.2*	67	19.4	60	N			1		0			Smooth		Blue sky	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 30° 48′, W. 153° 11′			30.10†	764.5†				Var.			4–5		Light		W	Short	WSW	Fine	Capt. John Metcalf.
S. S. Gaelic, N. 40° 16′, W. 130° 15′			30.24*	768.1*	62	16.7	100	ESE			4		c		E	Swell	SE	D. clouds	Capt. W. H. Kidley
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 50° 4′, W. 3° 56′	N80½E	10.7	29.83	757.7	58.0	14.4	100	SW			4		Fog			Rough		Moist	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds.

UNITED STATES MARINE SERIES.—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. Philadelphia, Pa			30.29*	769.4*	57	13.9	??	SW			3		2		SW			Rainy	Captain Sargent.
S. S. Ohio. Philadelphia, Pa			30.13	765.3	55	12.8	87	NE			1		10		NE			Overcast	Captain Morrison.
S. S. Pennsylvania, Liverpool			29.54†	750.3†	58	14.4	100	S			6		9		SW			Cloudy	Captain Harris.
RED STAR LINE MARINE SERIES. Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 48° 20′, W. 34° 23′			30.13*	765.3*	52	11.1		W	11	4.9			5		NW	Heavy	NNW	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES. Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.) Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Off Falmouth, Mass			30.03	762.7	54	12.2	74	N	4	1.8			10s			Smooth		Overcast	Capt. James Jorgensen.

* Aneroid; regulated to standard at Antwerp.

Note.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

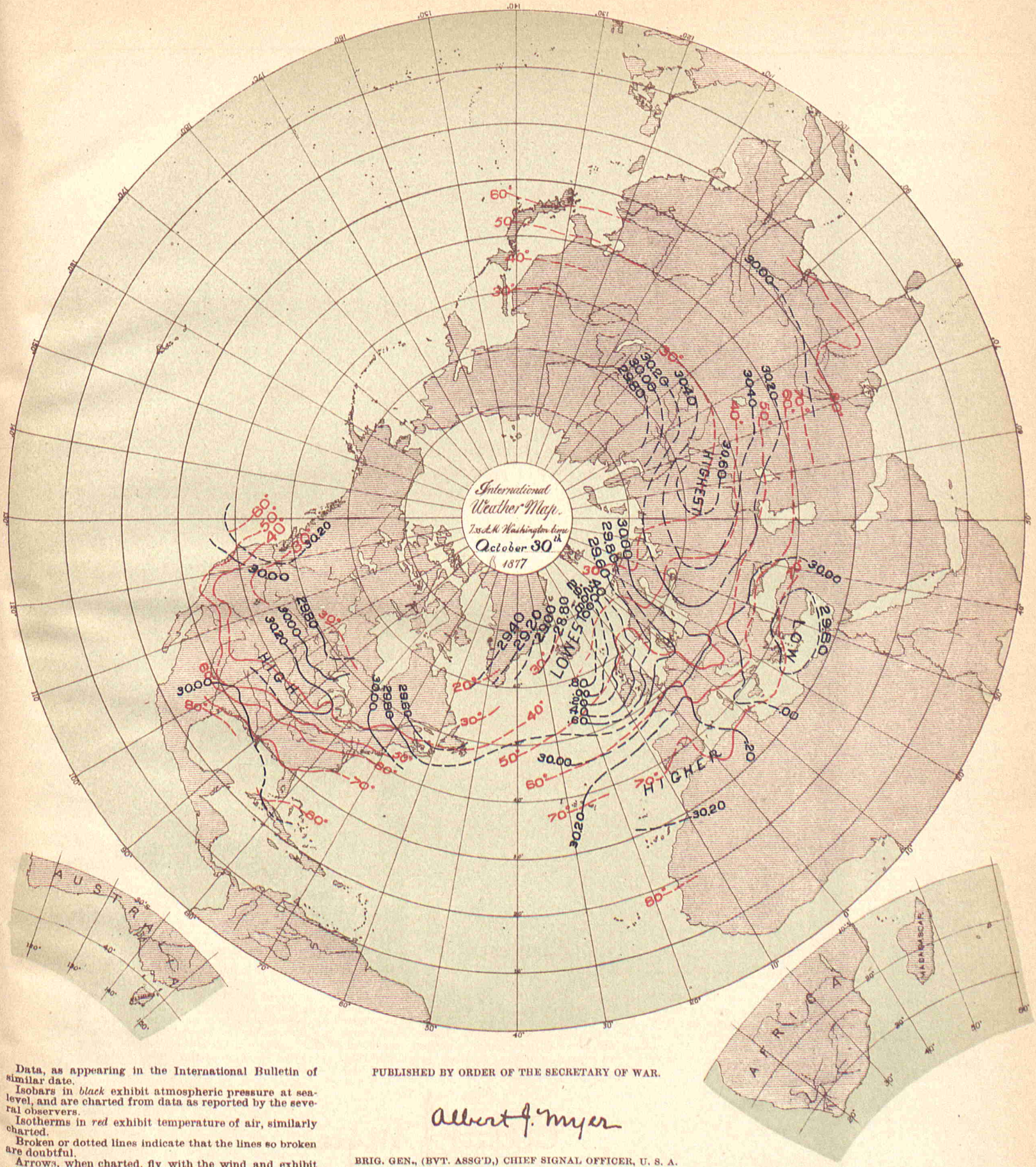
Note.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 31, 1877.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Teissier, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Nemours			30.17	766.2	71.1	21.7	62	N			1		0			0	0	Clear	Michel.
Algiers			30.20	767.1	70.5	21.4	63	N			1		2			0	0	Fair	Peter.
La Calle			30.35	770.9	68.5	20.3	80	NW			2		7			0.118	3.0	Very cloudy	Fleury.
Tunis			30.10	764.5	68.0	20.3	76	NNW			3		6			0.197	5.0	Cloudy	Jacques.
Sfax			30.15	765.9	66.2	19.0		N			2		8			0.079	2.0	Very cloudy	Husson.
Saida			30.29	769.4	73.8	23.2	25	N			2		2			0	0	Fair	Millot.
Tebessa			30.15	765.7				NW			4		9			0	0	Covered	Bourgeois.
Geriville			30.27	768.9	68.0	20.0	33	NE			2		1			0	0	Very fair	Lemaillot.
Laghouat			30.25	768.4	71.6	22.0	43	N			4		0			0	0	Clear	François.
Biskra			30.22	767.5	75.7	24.3	29	NW			2		5			0	0	Cloudy	Kuntz.

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m.; or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.48	748.8	30.03	762.8	55.8	13.2	58	SW			3		2			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.09	738.9	29.86	758.5	47.8	8.8	89	W			1		10			0.264	6.7		Dr. Wierzbiski.
Eperies	29.11	739.4	30.00	761.9	49.3	9.6	79	S			1		10n			0	0		Julius Mikolik.
Gratz	28.74	730.0	30.00	762.0	49.3	9.6	72	SE			1		1			0.138	3.5		Andreas Rospini.
Hermannstadt	28.67	725.7	29.98	761.6	55.2	12.9	58	Calm			0		5			0	0		Prof. Reissenberger.
Kremsmünster	28.63	727.2	29.97	761.2	53.6	12.0	89	W			3		10			0.094	2.4		Prof. C. Wagner.
Lemberg	28.87	733.2	29.85	758.2	52.3	11.3	71	SW			2		4			0.150	3.8		Dr. T. Stanecki.
Pola	29.89	759.2	30.00	762.0	58.8	14.9	63	NW			3		1s			0	0		I.R.Hydrographic Office.
Szathmar																			Johann Tamas, S. J.
Szegedin	29.81	757.1	30.09	764.3	53.6	12.0	76	S			1		5			0	0		Karl Stancel.
Trieste	29.96	761.0	30.07	763.6	59.0	15.0	87	W			1		0			0	0	Clear	P. Busin.
Vienna	29.23	742.5	29.93	760.1	57.4	14.1	78	W			3		9			0.106	2.7		I. R. Central Met. Obs'y.

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time, and at Trieste at 7 a. m. of the following day. The elevation of Gratz is 343.5 meters, or 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8, p. m.; Gratz, at 2:0, instead of 1:45, p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.68	728.5	30.20	767.0	53.1	11.7	64	W			3		9			0.004	0.1		Prof. M. Passau.
Brussels	29.97	761.2	30.17	766.4	55.0	12.8	55	W			5		5		WNW	0	0		Royal Observatory.
Furnes	30.00	762.1	30.03	762.7	55.6	13.1	64	W			4		3			0	0		M. E. de Cae.
Maeseyck	29.97	761.3	30.11	764.9	53.2	11.8	75	W			6		7			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.1 feet. At Arlon the observations have been taken at 1:1, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Aberdeen	29.62	752.3	29.72	754.9	50.2	10.1		SW	19	8.5			2			0	0	Blue sky	W. Boswell.
Ardrossan	29.88	758.9	29.90	759.4	53	11.7		W			6		7					Showery	William McNeil.
Armagh, Observatory			30.08	764.0	50.4	10.2		WSW	13	5.8			6					D. clouds	S. Call, for Dr. Robinson.
Bidston, (Liverpool Obs.)			30.08	764.0	53.0	11.7		WSW	41	18.3			2					Blue sky	John Hartnup.
Birr Castle, (Parsonstown)			30.21	767.3	53.0	11.7		W			3		6					D. clouds	J. Dreyer.
Bradford, Yorkshire	29.59	751.6	29.99	761.7	52.7	11.5		NW			6		2			0.13	3.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	84.5	29.2		NE			1		2					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.16	766.1	53.5	11.9		W			2		10			1.305*	33.15*	Overcast	H. Todd. [H. C.
Cardington			30.17	766.3	54.6	12.6		W			3		8					Overcast	John McLaren.
Chatham, School M. E.	30.07	763.8	30.20	767.1	52.2	11.2		W			2		5					Blue sky	Lt. Col. C. M. Martin, R. E.
Dartmoor	28.72	729.5	30.22	767.6	48.6	9.2		W			3		4					Fine	Alexander Watt.
Davos Platz, (Switzerland)																			Francis Redford, M. A.
Donaghadee	30.00	762.0	30.03	762.7	51	10.6		W			4		5					D clouds	J. Mac Gowan.
Dover	30.19	766.8	30.21	767.3	54	12.2		WNW			3		2					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.09	764.3	54.7	12.6		SW	8.6	3.8			7					Squally	Thomas Mackereth.
Falmouth, Observatory	30.12	765.0	30.35	770.9	55.9	13.3		WNW			3		8					Overcast	The Staff.
Fort Napier, (Natal)	27.64	702.0	29.84	757.9	72.8	22.7		E			3		2					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)			29.95	760.7	83.5	28.6		Calm			0		4					D. clouds	
Galway, Queen's College					54	12.2		W			5		4					D. clouds	B. G. Clare, for Prof. Curtis.
Gibraltar, (Mediterranean)	30.17	766.3	30.21	767.3	72.5	22.5		NE			5		1					Blue sky	Corpl. C. Aitken, A H.C.
Glasgow, Observatory	29.67	753.6	29.88	758.9	47.3	8.5		WSW			4		4					Blue sky	D. G. Maclean.
Great Yarmouth	30.09	764.3	30.10	764.5	53	11.7		W			4		5					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	30.04	763.0	30.21	767.3	54.2	12.3		W			4		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.12	765.0	30.34	770.6	56.5	13.6		NNW			3		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.32	770.1	59	15.0		NW			4		3			0.3	8	D. clouds	M. P. Moyle.
Holyhead	30.11	764.8	30.16	766.1	52	11.1		WSW			4		3					D. clouds	John Tilston.
Jersey	30.08	764.0	30.37	771.4	57.0	13.9		WNW			5		8					Gloomy	J. Fisher.
Kew, Observatory			30.22	767.6	54.2	12.3		W	19	8.5			9					Threatening	The Staff.
Kingstown	30.12	765.0	30.15	765.8	52	11.1		WNW			4		9					Overcast	George Mitchell.
Leicester, Museum			30.12	765.0	53.5	11.9		W			3		8					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.99	761.7	65.8	18.8		NE			2		8					D. clouds	Sergt. Fred Travis, A. H. C.
Nairn	29.55	750.6	29.64	752.8	49	9.4		SW			4		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.96	761.0	82.1	27.8		NE			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.92	760.0	30.11	764.8	56.2	13.4		SW			5		7k		W	0.031	0.79	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.60	751.8	30.12	765.0	55.0	12.8		W			6		7					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.20	767.1	54	12.2		W			3		8					Overcast	F. Lucas
Plymouth	30.23	767.8	30.31	769.9	56.0	13.3		W			1		10					Overcast	John Merrifield.
Roche's Point	30.20	767.1	30.25	768.3	55	12.8		W			4		5					½ clouded	W. Kennedy.
Saint Ann's Head	30.07	763.8	30.24	768.1	55	12.8		W			5		7					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys)			29.52	749.8	47.5	8.6		WSW	34	15.2			10					Showery	Rev. C. Clouston, LL. D
Scutari, Cemetery, (Turkey)			29.84	757.9	61.4	16.3		NE			2		9					Raining	Sergt. W. H. Lyne.
Sheffield	29.81	757.2	30.05	763.3	53.2	11.8		WNW			6		3			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	29.96	761.0	29.99	761.7	52.5	11.4	75	NW			6		3			0.030	0.76	D. clouds	Rev. F. Redford, M. A.
Stonyhurst, Observatory					51.9	11.1		W			6		8					Squally	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)			29.55	750.6	46	7.8		W			7		8					Rain & hail	John Smith.
Stratfield Turgiss	30.00	762.0	30.22	767.6	53.7	12.1		W			1		5					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.53	750.0	51	10.6		WSW			5		5					D. clouds	John Trotter.
Truro, Royal Institution			29.36	745.7	59	15.0		NW			5		6					D. clouds	W. Newcombe.
Valencia, Observatory			30.29	769.4	54.4	12.4		W	23	10.3			6					D. clouds	The Staff.
SUB-SERIES.																			
Calf of Man, (Isle of Man)					50	10.0		W			8		10			0.60	15.2		Henry Mercer.
Cape Good Hope, Obs'y	29.77	756.1	29.81	757.2	85.1	29.5	35	WNW	10	4.5		10	9						The Staff, for E. J. Stone.
Hobart Town, (Tasmania)			29.46	748.3	56.5	13.6	77	N			3		10n			0	0	Covered	Francis Abbott, F.R.A.S
Leith, Restalrig Park			29.86	758.4	49.0	9.4		W			6		2k			0.01	0.3	Showery	Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	762.0	77.9	25.5	71	ENE	11.8	5.3		7	4	NW	ENE	0.07	1.8	Cloudy	C. Meldrum.
Melbourne, Observatory	29.55	750.6	29.64	752.8	70.0	21.1	32	N	30	13.4			3			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)			29.66	753.4	51	10.6		W			8	5	5	W		0.4	10.		J. Youngclause.
North Unst, (Shetland Is.)			29.35	745.5	49	9.4		W			6	4	8	WNW		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer for Cardington, Galway, Oxford, Sandwick, Leith, Monach and North Unst as read off; the amount of cloudiness for Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m.; Sheffield, 8 a. m., following day, local time. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Davos Platz, 5,105? ft., or 1,556.0? m.; Fort Napier, 2,200 ft., or 670.6 m. *Rain-fall during the month.

MARINE SERIES. VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria, N. 49° 59′, W. 24° 4′			30.21	767.3	56	13 3		SSW			3		4			*20	NW	D clouds	Capt. W. Watson.
S. S. Batavia																			Capt. J. E. Mouland.
Ship Camperdown																			Capt. A. T. Miller.
Brig Catherine, N. 49° 10′, W. 26° 5′			30.25	768.3	57	13.9		S			3		5			3	WNW	D clouds	Capt. Adam Smith.
Barque Celeste																			Capt. D. F. McKechnie
S. S. Hibernia																			Capt. W. R. Cato
Barque Maroon																			Capt. A. T. Brown.
Ship Mikado																			Capt. C. C. Prehn.
S. S. Seine																			Capt. H. Manning.
Barque Sorata																			Capt. Jas. J. Price.
Schooner Traveller, Queenstown, Ireland			30.27	768.8	52	11.1		W			3		8					D. clouds	Capt. Alex Simpson.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation The barometers and thermometers used by these observers have been generally carefully compared and corrected. *Feet.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.21	665.7			66.2	19.0	90	S			2	5c	1s		NE	0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Copenhagen	29.24	742.7	29.29	743.9	50.4	10.2	91	WNW			8		10					Rain and fog	
Fanöe	29.56	750.7	29.58	751.2	50.4	10.2	75	WNW			7		5						
Godthaab, (Greenland)	29.57	751.1	29.61	752.2	16.9	—8.4	76	ENE			2		0						
Stykkisholm, (Iceland)	29.44	747.8	29.48	748.9	31.5	—0.3	94	NE			8		10						
Thorshavn, (Faröe)	29.16	740.7	29.20	741.6	45.1	7.3	85	WSW			3		8					Raining	
Vestervig	29.34	745.1	29.50	749.4	48.4	9.1	86	WNW			8		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the cooperation of the Director of the Paris Observatory, and the respective observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer
Alençon, Normal School	29.87	758.7	30.42	772.7	55.4	13	77	NW			4		5		NW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.16	766.1	30.28	769.0	59.0	15.0		WNW			2		2		W	0	0	Slightly cl'dy	Bonvarne, Director.
Avignon, Normal School	30.08	764.0	30.16	766.0	71.1	21.7	53	N			3		0			0	0	Very clear.	Mr. Giraud, Director.
Bar-sur-Seine	29.74	755.5	30.32	770.0	56 3	13.5	66	N			2		8kn		NW	0.091	2.3	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	30.21	767.2	30.37	771.4	57.7	14.3	65	NW	6.3	2.8					W	0	0		Albert Cheux.
Beauvais	30.01	762.2	30.30	769 5	54.9	12.7	52	WNW			3		8		NW	0	0	Cloudy	Normal School.
Besançon	29.43	747.6	30.33	770.3	57.9	14.4	72	SW			3		8		W	0	0	Very cloudy	Normal School.
Bourg-en-Bresse	29.49	749.1	30.40	772.2	59.2	15.1	68	N			2		5kn		W	0.04	1.	Cloudy	Normal School.
Bourges, Normal School	29.80	756.8	30.35	770.9	57.2	14	76	W			2		5		W	0.031	0.8	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.12	765.1	30.31	770.6	57.4	14.1	75	WNW			3		6k		WNW	0.020	0.50		The Staff.
Carcassonne, Normal School	29.93	760.2	30.34	770.7	64.0	17.8	88	W			2		5		W	0	0	Cloudy	Vateau, Director.
Caen	30.27	768.8	30.35	770.8	55.4	13	84	E			1		5		E	0	0	Cloudy	Normal School.
Chartres, Normal School	29.87	758.7	30.24	768.0	59.0	15	72	NW			2		10			0	0	Covered	Lequin, Director.
Châlons-sur-Marne, N. Sch'l	29.95	760.6	30.26	768 7	56.8	13.8	64	W			2		5k		W	0.028	0.7	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D.Obs	28.97	735.8	30.32	770.0	60.8	16.0	53	NW			2		5		W	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.39	746.6	30.28	769.1	54.3	12.4	74	W			2		2kn		W	0.08	2.	Slightly cl'dy	Dr. Goulet, Director.
Commune de Gréasque*	29.01	736.9	30.15	765.9	68.2	20.1	62	NW			4		2		NW	0	0	¼ covered	M. Kina.
Grenoble																			Normal School.
La Roche-sur-Yon, N. School	30.15	765.9	30.37	771.4	60.8	16	59	NW			2		5		NW	0.059	1.5	Cloudy	Mouillot, Director.
Le Mans, Normal School	30.07	763.6	30.37	771.5	56.7	13.7	69	NW			6		5		NNW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.42	747.3	30.36	771.2	57.4	14.1	80	N			1		5		SE	0.126	3.2	Cloudy	Pin, Director.
Lorient, Naval Observatory	30.32	770.0	30.42	772.6	58.6	14.8		WNW			3		10			0	0	Covered	T. Carré, Director.
Mâcon, Normal School	29.65	753.2	30.31	769.8	57.9	14.4	78	NW			4		5		NW	0.08	2.	Cloudy	M. Marchal, Director.
Metz																			M. A. Schuster, Dir.
Mirecourt	29.24	742.7	30.29	769.4	55.4	13	97	SW			2		10		E	0	0	Covered	Normal School.
Nismes, Normal School	29.97	761.2	30.17	766.3	66 2	19	75	W			1		5			0	0	Cloudy	Boyer, Director.
Orleans, Normal School	29.79	756.7	30.17	766.3	58 3	14.6	65	W			2		5		NW	0	0	Cloudy	Bernard, Director.
Paris, Observatory	30.07	763.7	30.31	769.8	56.7	13.7	57	W			1		9k		W	0	0	Almost cov'd	National Observatory.
Privas	29.16	740.7	30.23	767.8	58.1	14.5	72	NW			4		5		NW	0	0	Cloudy	Normal School
Rochefort, Naval Obs'y	30.39	771.8	30.42	772.6	62.6	17.0	72	W			3		8		W	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.22	767.6	30.31	769.8	57.9	14.4	70	WNW			2		10		W	0.016	0.4	Covered	F. Lucard, Director.
Tarbes, Normal School	29.35	745.6	30.44	773.1	59.0	15	39	W			1		10			0	0	Covered	T. Hugues, Director.
Villefranche	29.63	752.6	30.34	770.7	62.1	16.7	73	N			2		8			0.016	0.4	Very cloudy	Vilot, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.77	756.2	29.80	756.9	80.6	27										0	0		L'Abbé Marchésl.
Marseilles, Observatory			30.10	764.4	73.6	23.1	71	NW			4		4			0	0	Partly cl'dy	The Staff.
Mont-Louis	25.18	639.5	30.49	774.5	62.4	16.9	74	NNW	7.4	3.33			2		NW	0	0		Mr. Falguère.
Nice																			Dr. A. Niepce.
Paris, Montsouris Obs'y	30.02	762.6	30.30	769.6	56.7	13.7	61	NNW			2-3		9		NW	Inap.	Inap.		Marié Davy, Director.
Perpignan			30.24	768.0	71.4	21.9	65	N	29.8	13.33			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.	21.52	546.6			40.1	½.5		SW			1		2					Clear	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.88	581.3			51 8	11.0		SW			1		2			0	0	Clear	Gen'l de Nansouty.
Saint Maur, (near Paris)	30.15	765.8	30.32	770.0	56.7	13.7	56	WNW			2		10k		WNW	0	0	Covered	E. Renou.
Toulouse, Observatory	29.60	754.0	30.42	772.6	58.8	14.9	96	NNW			3		10			0.012	0.3		The Staff.
Tours	30.17	766.2	30.36	771.2	57.9	14.4	67	NW			1		9		WNW	0	0		C. Marquet.
Versailles, (near Paris)			30.31	769.9	56.8	13.8	58	NW			2		9			0.004	0.10	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.19	766.8	30.22	767.5	50.7	10.4	96	ENE	1.8	0.8			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; for Montsouris, the barometer reduced to freezing but not to sea-level. At Mirecourt the cloud direction is apparently given as toward, instead of from. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet; Commune de Gréasque, 322 m., or 1,056.4 ft.; Tarbes, 398 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,36[illegible] m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 145 millimeters has been added. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m.; local time. * Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Berlin	29.55	750.6	29.72	754.9	53.8	12.1	83	NW			5		10			0.118	2.99	Raining	Prof. Arndt.
Breslau	29.20	741.7	29.72	755.0	53.8	12.1	87	SW			4		10			0.162	4.11	Stormy	Royal University Obs'y.
Carlsruhe	29.72	754.8	30.15	765.7	57.9	14.4	71	SW			6		9			0.110	2.8		Albert Senz.
Cassel	29.41	747.0	30.02	762.5	54.7	12.6	67	NW			6		8	WNW		0.111	2.82		Dr. H. Möhl.
Crefeld	29.91	759.8	30.08	763.9	54 7	12.6	67	NW			6		8			0.04	1.		Director Lose.
Emden	29.94	760.4	29.97	761.3	53.1	11.7	78	WSW			7		6			0.150	3.8		Prof. Prestel.
Frankfort on the Main	29.79	756.7	30.16	766.0	57.4	14.1	36	W			2		3			0.067	1.7		Physical Society.
Friedrichshafen	28.77	730.8	30.21	767.2	57.9	14.4	73	W					6	WNW		0	0		M. Wilhelm.
Hamburg	29.68	753.9	29.75	755.7	52.5	11.4	75	WNW			7		8kn			0.217	5.5	Hy. squalls.	Captain F. Hegemann.
Kiel	29.65	753.2	29.67	753.6	50.7	10.4	79	WNW			8		10			0.392	9.95		Prof. G. Karsten.
Königsberg, (Prussia)	29.46	748.3	29.54	750.3	45.5	7.5	89	S										Cloudy	Prof. E. Luther.
Köslin			29.39	746.5	52.7	11.5		SSW			4		5			0.244	6.2		H. Müller.
Leipsic, Observatory	29.46	748.3	29.88	759.0	54.1	12.3	83	WSW			5		10	W		0.240	6.1	Raining	Prof. Bruhns.
Memel, Naval School	29.52	749.8	29.57	751.0	45.3	7.4	89	SSE			5		10n						Reinbrecht von Skalweit.
Neufahrwasser	29.45?	748.1?	29.45?	748.1?	47.1	8.4	94	S			6		10			0.130	3.3	Raining	A. Lothés.
Posen	29.31	744.5	29.60	751.8	54.5	12.5	94	WSW			3–4		10			1.906	48.4	Covered	Dr. Magener.
Strassburg Obs., (in Alsace	29.69	754.1	30.24	768.1	56.8	13.8	76	W			4		10	WNW		0.102	2.60		Dr. Schur.
Stuttgart	29.19	741.3	30.12	765.1	56.8	13.8	66	W			2		8	W		Blank	Blank		Prof. Schoder.
Treves, (Trier)	29.56	750.7	30.08	764.0	56.3	13.5	59	W			7		8			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.57	725.6	30.09	764.2	50.0	10.0	96	WNW			4		9kn		WNW	0.157	4.0	Raining	Dr. Von Bebber.
Wustrow, Naval School	29.53	750.0	29.57	751.1	50.9	10.5	82	W			7		10					Covered	E. F. Schütz.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet: Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made. The barometer at Berlin, Konigsberg, Posen and Wustrow is given in Paris lines, and, except Wustrow, reduced to freezing but not to sea-level; the temperature by Reaumur scale; the wind-force at Carlsruhe by the scale 0 to 4; Crefeld, by the scale 0 to 12; the rain-fall at Berlin in Paris lines. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.8	29.95	760.7	60.8	16.0		N										Cloudy	D. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and wind-force. They omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.94	760.3	29.98	761.6	86.4	30.2	49	W	7.0?	3.1?			1			0	0	D. clouds	
Deesa	29.52	749.7	29.99	761.7	88.5	31.4	34	Calm					7	NNE		0	0	D. clouds	
Bombay	29.85	758.2	29.89	759.2	84.9	29.4	66	NW	15.0	6.7			0			0	0	Blue sky	
Poona	27.89	708.5	29.90	759.3	79.8	26.6	47	E					5	S		0	0	D. clouds	
Lahore	29.29	744.0	30.05	763.2	77.4	25.2	44	W	2.3	1.0			0			0	0		
Belgaum	27.37	695.3	29.93	760.1	74.1	23.4	80	E	6.0	2.7			6	SW	E	0	0	D. clouds	
Bangalore																			
Roorkee	29.09	738.8	29.99	761.8	79.6	26.4	40	NW	1.7	0.8						0	0		
Agra	29.41	746.9	29.97	761.3	82.8	28.2	43	W								0	0		
Trichinopoly																			
Nagpur	28.91	734.3	29.96	760.9	79.6	26.4	54	Calm	3.1	1.4			8			0	0	D. clouds	
Madras																			
Lucknow	29.61	752.2	29.99	761.8	77.3	25.2	57	Calm	0.7	0.3						0	0	Blue sky	
Allahabad	29.66	753.4	29.98	761.4	77.4	25.2	59	Calm	1.0	0.4			0			0	0	Blue sky	
Patna	29.81	757.1	29.99	761.8	79.7	26.5	58	E	0.7	0.3			8	E	E	0	0	D. clouds	
Hazaribagh	27.98	710.6	30.03	762.8	70.8	21.6	89	SSE	3.9	1.7			10			0.12	3.0	Thunder-storm	
Cuttack	29.91	759.6	29.99	761.7	78.0	25.6	85	N	2.4	1.1			10			0.43	10.9	Drizzling	
Calcutta (Alipore)	29.97	761.3	29.99	761.8	79.9	26.6	72	N	5.0	2.2			8			0	0	D. clouds	
Goalpara	29.58	751.4	29.98	761.4	76.8	24.9	78	NE	2.4	1.1			10			0	0	Overcast	
Chittagong	29.87	758.7	29.96	761.1	82.2	27.9	77	NW	3.6	1.6			0			0	0	Gloomy	
Sibsagar	29.75	755.6	30.09	764.2	79.2	26.2	69	Calm	1.1	0.5			9	SW	SW	0	0	D. clouds	
Rangoon																			
Jubbulpore	28.58	725.8	29.95	760.6	80.0	26.7	45	E	2.5	1.1						0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Bangalore, 2,989 ft., or 911.0 m.; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Agriculture, Industry and Commerce, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Valdobbia	22.32	567.0	30.20	767.1	45.5	7.5	45	NW			4		2	NW		0	0		Ab. Dom. Morgini.
Stelvio	22.30	566.4	30.23	767.9	42.1	5.6		SSW			1		0			0	0		Signora Ernesta Manfredi.
Udine	29.61	752.1	30.03	762.7	59.0	15.0	43	Calm	0	0			0			0	0		Prof. Giovanni Clodig.
Padua	29.91	759.8	30.02	762.6	57.4	14.1	52	W	1.8	0.8			1			0	0		Prof. Dott. Lorenzoni.
Vicenza	29.83	757.7	30.03	762.7	59.0	15.0	51	NW	0	0			1			0	0		Conte Alm. Da Schio.
Verona	29.82	757.3	30.04	763.0	63.0	17.2	56	W								0	0		Dott. B. Bertoncelli.
Bergamo																			Prof. Trionfini Carlo.
Domodossola	29.03	737.3	30.07	763.8	57.2	14.0	68	SW			4		3			0	0		Prof. Giuseppe Calza
Milan	29.56	750.9	30.10	764.4	53.1	11.7		WSW			1		3			0	0		Ab. Gio. Capelli.
Pavia	29.72	755.0	30.08	763.9	47.5	8.6	97	N			1		10			0	0		Prof. Gio. Cantoni.
Moncalieri	29.15	740.3	30.07	763.8	55.6	13.1	65	SSE	3.1	1.4			2	NW		0	0		Prof. P. F. Denza.
Mondovi	28.12	714.3	30.06	763.4	59.4	15.2	47	ESE			4		3			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.88	759.0	30.10	764.6	65.7	18.7	71	SSW			2		6	SW		0	0		Prof. L. Vassallo.
Genoa	29.92	759.9	30.09	764.2	64.4	18.0	58	SW	1.3	0.6			2	N		0.004	0.1		Prof. G. M. Garibaldi.
Piacenza	29.81	757.2	30.07	763.8	50.0	10.0	91	NW	0	0			8	W		0	0		Dott. G. Manzi.
Parma	29.74	755.3	30.07	763.7	57.0	15.0	71	NW			2		9			0	0		Prof. P. Pigorini.
Florence	29.84	757.8	30.10	764.4	61.7	16.5	62	N			2		0			0	0		Cav. F. Meucci.
Leghorn	30.00	762.1	30.09	764.3	63.5	17.5	61	NW	3.1	1.4			0			0	0		Prof. P. Monte.
Siena	28.87	733.3	30.13	765.2	62.4	16.9	42	SW	0	0			1	N		0	0		Prof. L. Toscani.
Urbino	28.54	724.9	30.11	764.9	57.2	14.0	63	SSW			4		0			0	0		Prof. P. Serpieri.
Pesaro	30.01	762.3	30.07	763.6	55.6	13.1	72	NE	19.2	8.6			0			0	0		Prof. Luigi Guidi.
Ancona	29.95	760.8	30.06	763.5	58.6	14.8	68	NW			4		1			0	0		Prof. F. DeBosis.
Grosseto	29.97	761.3	30.09	764.2	67.3	19.6	45	NE			2		4	SE		0	0		Avv. P. Ponticelli.
Rome	29.90	759.5	30.08	764.0	63.7	17.6	47	N	3.1	1.4			0			0	0		Prof. P. A. Secchi.
Naples, O. U.	29.87	758.8	30.08	763.9	66.9	19.4	39	NE			4		2	N		0	0		Prof. L. Palmieri.
Lecce					62.1	16.7	61	NNW	18.6	8.3			1	N		0	0		Prof. C. De Giorgi.
Cosenza	29.16	740.7	30.06	763.4	60.8	16.0	78	NE	15.4	6.9			2			0	0		Prof. F. D. Conti.
Cagliari	29.84	757.8	30.02	762.6	67.5	19.7		SW			2		1			0	0		Prof. A. Pacinotti.
Riposto, (Sicily)	29.93	760.3	29.98	761.5	64.4	18.0	67	Calm			0		3			0	0		Prof. F. Caflero.
Palermo	29.74	755.4	30.00	761.9	63.1	17.3	48	NE	6.9	3.1			4			0	0		Prof. G. Cacciatore.
Caltanissetta	28.04	712.1	29.97	761.3	59.4	15.2	38	NE			2		1			0	0		Prof. A. Pagani.
Syracuse	29.87	758.8	29.95	760.8	64.4	18.0	60	NE			2		8	NE		0.004	0.1		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.54	750.2	30.09	764.3	64.6	18.1	46	WNW	0	0			0			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Stelvio is 2,543.0 meters, or 8,342.9 feet; Valdobbia, 2,548.0 m., or 8,359.3 ft.; Bergamo, 379.9 m., or 1,245.8 ft.; Mondovi, 559 m., or 1,834.2 ft.; Siena, 348.5 m., or 1,143.3 ft.; Urbino, 451 m., or 1,479.7 ft.; Caltanissetta, 570.3 m., or 1,871.0 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Tokei (Yeddo)																			The Observatory.
Tokei (Yeddo) University	30.03	762.7	30.13	765.2	55	12.8	97						10n			0.154	3.91	Raining	Prof. P. V. Veeder.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Aguascalientes																			I. N. Marin, M. D.
Córdoba																			C. Peña, M. D.
Cuernavaca																			L. Castillo, A. E.
Guadalajara																			Prof. L. Perez.
Guanajuato																			Prof. V. Fernandez.
Leon																			Prof. M. Leal.
Mexico	29.13	587.4	30.17	766.3	56.7	13.7	83	NW	0.1	0.04		0	2s			0	0	Clear	Central Observatory.
Orizaba																			N. N.
Orizaba																			I. Orozco, M. D.
Pabellon, (Aguascalts)																			M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Toluca																			Prof. C. Velazquez.
Tlacotalpam																			Prof. F. R. Bayly.
San Luis Potosí																			G. Barroeta, M. D.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. A. Bonilla, M. E.

NOTE.—The elevation of Aguascalientes, is 1,861 m., or 6,105.4 ft.; Córdoba, 838 m., or 2,749.3 ft.; Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594,2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,293 m., or 7,524.9 ft.; Orizaba, 1,223 m., or 4,012.4 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; Toluca, 2,625 m., or 8,611.8 ft.; San Luis Potosí, 1,593 m. or 5,210.4 ft.; Zacatecas, 2,493 m., or 8,183.6 ft. The rain fall is generally measured at 6, a. m. local time, at Córdoba at 2, p. m.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.18	766.5	30.18	766.5	55.0	12.8		W			4					0.016	0.4		
Groningen	29.89	759.3	29.95	760.7	52.7	11.5		NW			5					0.083	2.1		
Helder	30.00	762.0	30.00	762.0	52.5	11.4		W			5					0	0		
Hellevoetsluis			30.12	765.1	53.6	12.0	74	W			5								
Utrecht	30.04	763.1	30.09	764.3	55.6	13.1	65	W			5		5			0.008	0.2	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.34	745.1	29.39	746.5	44.2	6.8	94	N	4.5	2.0			4			0.614	15.6		
Brönö	29.30	744.3	29.34	745.3	44.2	6.8	63	SSE	9	4			8			0.205	5.2		
Christiania	29.20	741.7	29.35	745.4	44.6	7.0	88	E	4	2			10			0.406	10.3	Light rain	
Tromsö	29.41	746.9	29.45	748.0	38.8	3.8	73	Calm	0	0			4			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Angra, (Azores)	29.94	760.5	30.13	765.3	68.0	20.6	92	ESE	3.1	1.4			8			0.079	2.0		Dr. J. A. Sampaio
Campo Major	29.22	742.2	30.21	767.3	77.9	25.5	26	ENE	4.3	1.9			3			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.09	764.3	30.16	766.1	73.4	23.0	56	WSW	4.9	2.2			1			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.86	758.4	30.21	767.3	71.4	21.9	60	NE	19.9	8.9			1	E		0	0		The Staff.
Ponta Delgada, (Azores)	30.12	765.0	30.19	766.8	70.2	21.2	87	S	6.3	2.8			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0–9	Direction from—	Weather.	Observer.
S. S. India.																			A. D. Pedroso, Com'd't. Lt. S. A. P. de Mirando.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Warsaw	29.29	743.9	29.71	754.7	46.8	8.2	88	SSE	18	8			10					Light rain	Astronomical Obs.
Wilna	29.39	746.5	29.81	757.2	47.8	8.8	96	SSE	2	1			10					Raining	Astronomical Obs.
Dorpat	29.57	751.1	29.82	757.4	42.1	5.6	91	SE	9	4			10					Raining	Prof. Dr. Weihrauch
St. Petersburg	29.96	761.0	29.98	761.4	40.6	4.8	89	SE	18	8			10					Light rain	Central Physical Obs.
Kuopio	29.59	749.3	29.83	757.6	40.1	4.5	94	SSE	18	8			10					Raining	Ch. Forsten.
Zieff	29.36	745.8	29.99	761.7	50.0	10.0	64	SE	9	4			0						Physical Cabinet.
Nikolaiev	29.92	760.0	29.99	761.8	54.7	12.6	63	S	4	2			0						Kurdakof.
Kertch	29.95	760.8	29.97	761.3	63.3	17.4	76	E	4	2			6						Lagorio.
Moscow	29.77	756.2	30.34	770.6	42.4	5.8	81	S	11	5			8						Meteorological Obs.
Lugan	29.95	760 7	30.15	765 9	51.3	10.7	56	E	18	8			2						Meteorological Obs.
Archangel	30.11	764.8	30.13	765.3	40.8	4.9	92	S	18	8			10						Ogorodnikof.
Tiflis	28.76	730.4	30.17	766.2	61.0	16.1	71	E	4	2			10						Physical Observatory.
Astrakhan	30.42	772.6	30.34	770.5	51.3	10.7	49	ENE	9	4			0						Sebastianof.
Kasan	30.25	768.3	30.54	775.6	32.7	0.4	92	S	2	1			10						Physical Cabinet.
Orenburg	30.13	765.2	30.52	775.2	36.5	2.5		NE	7	3			10						Tschernischef.
Ekaterinburg	29.58	751.2	30.57	776.5	33.6	0.9	56	Calm	0	0			3s						Meteorological Obs.
Nukuss	29.87	758.7	30.11	764.7	55.9	13.3	52	NNE	7	3			10						
Kasaly																			Bobrof.
Tashkend	28.48	723.4	30.17	766.4	58.6	14.8	52	NW	11	5			10						Michelson.
Barnaul	29.82	757.4	30.38	771.7	20.7	— 6.3	90	N	0	0			10						Meteorological Obs.
Yeniseisk	30.16	766.1	30.31	769.8	12.2	—11.6	86	W	4	2			10						Marks.
Irkutsk																			Usolzef.
Oorga																			Mossin.
Peking, (China)	29.95	760.7	30.09	764.3	49.6	9.8	69	Calm	0	0			2						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor					19.0	— 7.2	78	Calm	0	0			0						

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Ekaterinburg, 306. 4? m., or 1,005.2? ft.; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft.; Oorga, 1,281.0? m., or 4,202.6? ft.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y																			Antonio Rave, Director.
Bilbao, Met. Obs'y																			Prof. Manuel de Naveran.
Burgos, Met. Obs'y																			Domingo Martin y Perez.
Madrid, Royal Observatory	27.69	703.2	30.25	768.3	73 2	22.9	52	NE	7.4	3.33		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y																			Olayo Diaz, Director.
Santiago, Met. Obs'y																			R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.86	758.3	29.94	760.4	77.7	25.4	88	Calm	0	0		1c;ck	0	NW		0	0	Clear	Benito Vines, S. J.
San Fernando, Naval Obs'y.	30.09	764.2	30.18	766.6	79.3	26.3	35	ESE	18.0	8.1		4	1	E	E	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.			29.84	757.9	80.2	26.8	86	SE	3.0	1.36		5cs	3kn	E	E	2.894	73.50	D. clouds	Leonardo de Tejeda, Chief of Engineers.

NOTE.—The originals give the weather in general terms, as published; wind-velocity for Madrid in kilometers per hour; rain-fall for San Juan as measured at 4 p. tead of 8:19 a m., local time, and for San Fernando at midnight following. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Chief of the Meteorological Division of the Upsala Observatory.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Low'r 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.74	755.4	29.78	756.4	36.3	2.4	.....	SE	.....	.....	4	.....	5	.....	.....	0	0	.....	
Umea	29.58	751.2	29.63	752.5	39.9	4.4	100	S	.....	.....	6	.....	10	.....	.....	0.087	2.2	Light rain	
Hernosand	29.47	748.6	29.52	749.9	41.4	5.2	100	SSE	.....	.....	4	.....	10	.....	.....	0.020	0.5	Raining	
Stockholm	29.24	742.6	29.41	747.1	45.5	7.5	88	S	.....	.....	4	.....	10	.....	.....	0.331	8.4	Raining	
Wisby	29.34	745.2	.....	.....	45.7	7.6	94	SSE	.....	.....	6	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.35	745.6	29.43	747.5	43.5	6.4	99	ESE	7.8	3.5	.....	.....	10	.....	SE	0.276	7.00	Raining	Dr. Hildebrandsson.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.85	732.9	30.25	768.3	65.5	18.6	59	W	.....	.....	1	.....	3	.....	.....	0.047	1.2	Cloudy	The Observatory.
Zurich	28.69	726.4	30.23	767.8	55.9	13.3	74	W	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—For Geneva the corresponding departures from the normal values are: Barometer, +6.8 mm; Thermometer, +8.7 cent.; Relative Humidity, —24 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.90	759.5	59.9	15.5	91	N	13	6.0	.....	.....	10	.....	NE	0.83	21.	.....	The Observatory.
Fao, (Persian Gulf)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. Stefanidès.
Salonica	.....	.....	30.01	762.3	61.2	16.2	.....	N	.....	.....	1	.....	5	.....	.....	Blank	Blank	.....	A. Bertrand.
Valona	.....	.....	29.99	761.7	63.0	17.2	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	Imperial Observatory.
Varna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86?	758.4?	29.86?	758.5?	79.0	26.1	53	SW	.....	.....	3	.....	3ks	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck

Note.—The originals give the wind-force by the scale 0 to 7, (except Beirut by the scale 0 to 12, and Constantinople velocity in meters per second;) the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and, except Constantinople and Beirut, the amount by the scale 0 to 4. It is assumed, except for Constantinople, that the barometer is reduced to sea-level.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	29.89	759.2	29.96	761.0	36.5	2.5	79	W	3.0	1.3	.....	3	.....	.....	.....	0	0	.....	Hon. J. Ferguson.
Brockville, Ontario	.....	.....	29.84	757.9	40	4.4	.....	Calm	0	0	.....	.....	10s	.....	.....	0.01	0.3	Light rain	W. R. Bigg.
*Chatham, N. B.	.....	.....	29.97	761.2	32	0.0	79	SW	5	2.2	.....	5c	0	SW	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	.....	.....	30.01	762.2	38	3.3	65	W	5	2.2	.....	0	0	.....	.....	0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.61	752.1	29.81	757.2	38.3	3.5	79	SW	.....	.....	1	.....	10s	.....	.....	0.091	2.31	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.94	760.5	29.97	761.2	31	— 0.6	82	W	.....	.....	1	.....	.....	.....	.....	0	0	Bright	H. A. Johnson.
Esquimault, B. C.	30.08	764.0	30.12	765.0	35.1	1.7	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bovis.
*Father Point, Quebec	.....	.....	29.96	761.0	32	0.0	81	S	4	1.8	.....	2c	5s	SW	SW	0	0	Fair	J. McWilliams.
Fredericton, N. B.	30.01	762.2	30.08	764.0	32.0	0.0	76	W	4	1.8	.....	c	0	.....	.....	Inap.	Inap.	Clear	Prof. Harrison.
*Fort Garry, Manitoba	.....	.....	29.95	760.7	26	— 3.3	96	NW	5	2.2	.....	5k	5k	W	W	0.060	1.5	Cloudy	James Stewart.
Goderich, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Strang, M. A
Granton, Ontario	28.65	727.7	29.76	755.9	41	5.0	82	SW	.....	.....	1	2cs	0	NE	.....	Inap.	Inap.	Clear	James Grant.
*Halifax, N. S.	29.90	759.4	30.04	763.0	35	1.7	88	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.	F. Allison, M. A.
Hamilton, Ontario	29.40	746.7	29.77	756.1	44.9	7.2	82	SW	.....	.....	2	8ck	.....	SW	.....	0.15	3.8	Cloudy	Geo. Dickson, M. A
Heart's Content, N. F.	29.75	755.6	29.77	756.1	41	5.0	61	W	.....	.....	5	1k	2ks	W	W	0.01	0.3	Fine	E. Weedon.
*Kingston, Ontario	29.48	748.8	29.84	757.9	45	7.2	74	S	8	3.6	.....	.....	10n	.....	S	0.06	1.5	Light rain	S. Woods, M. A.
Little Glace Bay, N. S.	29.90	759.4	29.95	760.7	40.6	4.8	76	W	4	1.8	.....	3k	.....	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.67	753.6	29.87	758.7	38	3.3	85	S	6	2.7	.....	.....	Haze	.....	.....	0	0	Hazy	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.97	735.8	29.68	751.3	41	5.0	91	SW	15	6.7	.....	5k	5n	SW	SW	0.05	1.3	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.00	736.6	29.76	755.9	39.7	4.3	91	Calm	.....	.....	0	.....	10n	.....	.....	.....	.....	Raining	J. F. Jeffers, B. A.
Port Dover, Ontario	29.10	739.1	29.79	756.7	45	7.2	86	SW	10	4.5	.....	.....	10n	.....	SW	0.04	1.0	Threatening	H. Morgan.
Port Hastings, N. S.	29.97	761.2	30.02	762.5	35.2	1.8	.....	W	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.14	740.1	29.78	756.4	48	8.9	65	W	16	7.2	.....	8k	0	W	.....	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.62	752.3	29.95	760.7	36	2.2	71	Calm	0	0	.....	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.25	742.9	29.71	754.6	38	3.3	95	E	4	1.8	.....	.....	10s	.....	SW	Inap.	Inap.	Light rain	W. H. McIntyre.
St. John, N. B.	29.86	758.4	30.04	763.0	33	0.6	80	Calm	0	0	.....	7c	0	.....	.....	Inap.	Inap.	Fair	G. Murdock, C. E.
*Saugeen, Ontario	28.97	735.8	29.67	753.6	42	5.6	95	NW	16	7.2	.....	.....	10n	.....	W	0.07	1.8	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	29.73	755.1	40	4.4	56	SE	6	2.7	.....	.....	8n	.....	W	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.45	722.6	29.73	755.1	42.4	5.8	79	SW	12.0	5.4	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B.	29.95	760.7	29.98	761.5	44	6.7	76	W	9	4.0	.....	2k	2ks	NW	NW	Inap.	Inap.	Fair	T. C. Hill.
*Toronto, Ontario	29.38	746.2	29.76	755.9	44	6.7	82	SW	7	3.1	.....	.....	10n	.....	SW	0.01	0.3	Light rain	Magnetic Observatory.
Windsor, N. S.	29.94	760.5	30.04	763.0	36.0	2.2	80	SW	2	0.9	.....	2cs	.....	.....	.....	0	0	Fair	Prof. John E. Oram.
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Montgomery.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	41.0	5.0	74	SW	.....	.....	.....	5k	5s	.....	.....	0.02	0.5	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, Stayner, St. Johns, N. F., and those telegraphed, give the amount of cloudiness by the scale 0 to 4; for Bathurst not any distinction between upper and lower clouds. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft. or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.73	755.1	29.96	761.0	39	3.9	63	NW	2	0.9			10ks		Calm	0	0	Cloudy	
Alpena, Michigan	29.03	737.3	29.68	753.9	37	2.8	90	SW	6	2.7		0	8s		SW	0.02	0.5	Fair	
Atlantic City, New Jersey	29.90	759.4	29.92	760.0	56	13.3	80	SE	20	8.9			10n		SE	Inap.	Inap.	Light rain	
Augusta, Georgia	29.72	754.9	29.89	759.2	67	19.4	100	Calm	0	0			10s; fg		SW; Calm	0.93	23.6	Foggy	
Baltimore, Maryland	29.85	758.2	29.90	759.4	51	10.6	86	NE	4	1.8			10s		NE	0.11	2.8	Threatening	
Barnegat, New Jersey	29.90	759.4	29.92	760.0	55	12.8	73	SE	20	8.9			10n		SE	0.10	2.5	Light rain	
Bismarck, Dakota	28.09	713.5	29.78	756.4	30	— 1.1	78	SW	4	1.8			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.14	689.3	29.84	757.9	28	— 2.2	77	S	2	0.9		1k	0	Calm		0	0	Clear	
Boston, Massachusetts	29.85	758.2	30.01	762.2	45	7.2	61	Calm	0	0		5cs	Sm'e	W		0	0	Smoky	
Brackettville, Texas	28.69	728.7	29.68	753.9	75	23.9	85	E	5	2.2			10n		Calm	Inap.	Inap.	Light rain	
Breckenridge, Minnesota	28.97	735.8	30.01	762.2	25	— 3.9	88	W	6	2.7			10ks		Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	29.89	759.2	29.95	760.7	74	23.3	90	Calm	0	0			10s		Calm	0.04	1.0	Cloudy	
Buffalo, New York	29.08	738.6	29.78	756.4	43.0	6.1	100	W	4	1.8			10n		SW	0.05	1.3	Heavy rain	
Burlington, Vermont	29.67	753.6	29.94	760.5	39	3.9	71	S	6	2.7		10c	0	Calm		0	0	Cloudy	
Cairo, Illinois	29.68	753.9	30.08	764.0	51	10.6	65	NW	5	2.2		2ck	0	NW		0	0	Fair	
Camp Grant, Arizona																			
Camp Verde, Arizona	26.77	680.0	30.26	768.6	31	— 0.6	89	NW				0	0			0.01	0.3	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	29.81	757.2	29.81	757.2	65	18.3	94	SE	1	0.4			10n		SW	1.00	25.4	Light rain	
Cape Henry, Virginia	29.80	756.9	29.82	757.4	63	17.2	94	SE	11.	4.9			10n		SE	0.27	6.9	Light rain	
Cape Lookout, N. Carolina	29.83	757.7	29.85	758.2	67	19.4	95	SW	8	3.6			10n		SW	0.59	15.0	Light rain	
Cape May, New Jersey	29.86	758.4	29.89	759.2	56	13.3	81	E	16	7.2			10s		SE	0.09	2.3	Threatening	
Charleston, South Carolina	29.84	757.9	29.91	759.7	69	20.6	95	SW	6	2.7			10n		Calm	1.68	42.7	Light rain	
Cheyenne, Wyoming	23.97	608.8	29.91	759.7	3	—16.1	100	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.18	741.2	29.88	758.9	38	3.3	72	W	9	4.0			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.22	742.2	29.86	758.4	52	11.1	60	W	2	0.9			10s		W	Inap.	Inap.	Cloudy	
Cleveland, Ohio	29.14	740.1	29.87	758.7	45	7.2	68	S	12	5.4			10s		S	Inap.	Inap.	Cloudy	
Concho, Texas					49	9.4	92	NE	8	3.6		8cs	0	NE		0.04	1.0	Cloudy	
Corsicana, Texas	29.60	751.8	30.07	763.8	60	15.6	94	N	1	0.4			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.37	746.0	30.02	762.5	36	2.2	70	W	7	3.1		0	0			0	0	Clear	
Denison, Texas	29.31	744.5	30.12	765.0	52	11.1	93	NW	4	1.8			10ks		NW	0.63	0.8	Cloudy	
Denver, Colorado	24.75	628.6	29.97	761.2	24	— 4.4	87	SE	2	0.9		0	0			0	0	Clear	
Detroit, Michigan	29.10	739.1	29.77	756.1	45	7.2	68	SW	9	4.0		5cs	Sm'e	SW	Calm	0	0	Fair	
Dodge City, Kansas	27.50	698.5	29.83	757.7	43	6.1	83	N	4	1.8			10s		Calm	0	0	Cloudy	
Dubuque, Iowa	29.19	741.4	29.91	759.7	34	1.1	80	NW	8	3.6		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.18	741.2	29.88	758.9	35	1.7	52	N	6	2.7			10ks		N	Inap.	Inap.	Cloudy	
Eagle Pass, Texas	29.21	742.7	29.98	761.5	57	13.9	93	NW	4	1.8			10s		Calm	0.04	1.0	Cloudy	
Eastport, Maine	29.99	761.7	30.06	763.5	38	3.3	71	W	4	1.8		10c	Sm'e	NW	Calm	0	0	Cloudy	
Erie, Pennsylvania	29.09	738.9	29.80	756.9	46	7.8	85	SW	6	2.7			10s			Inap.	Inap.	Cloudy	
Escanaba, Michigan	29.09	738.9	29.76	755.9	34	1.1	79	W	6	2.7		2k	0	W		0.02	0.5	Clear	
Florence, Arizona	28.41	721.6	30.01	762.2	36	2.2	61	Calm				0	0			0	0	Clear	
Fort Bayard, New Mexico	23.96	608.6	29.96	761.0	45	7.2	76	Calm	0	0			10s		SW	0	0	Cloudy	
Fort Craig, New Mexico	25.42	645.7			40	4.4	82	NW	4	1.8		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.55	750.6	30.10	764.5	49	9.4	77	N	6	2.7			10s		Calm	0.04	1.0	Cloudy	
Fort Griffin, Texas	28.85	732.8	30.17	766.3	50	10.0	86	NW	6	2.7			Fog		Calm	0.03	0.8	Foggy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.88	733.5	30.02	762.5	46	7.8	92	NE	9	4.0			10s		NE	0.18	4.6	Cloudy	
Fort Sully, Dakota	28.32	719.3	30.06	763.5	25	— 3.9	87	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	29.97	761.2	30.01	762.2	67	19.4	94	NE	8	3.6			10s		NE	0.02	0.5	Cloudy	
Grand Haven, Michigan	29.16	740.7	29.80	756.9	47	8.3	70	W	22	9.8			10s		W	Inap.	Inap.	Cloudy	
Indianapolis, Indiana	29.14	740.1	29.92	760.0	48	8.9	42	W	6	2.7		0	0			0	0	Clear	
Indianola, Texas	29.99	761.7	30.02	762.5	70	21.1	90	NE	16	7.2			10ks		S	0.41	10.4	Cloudy	
Jacksboro, Texas																			
Jacksonville, Florida	29.92	760.0	29.94	760.5	73	22.8	85	SW	6	2.7		8k	0	SW		0	0	Cloudy	
Keokuk, Iowa	29.40	746.7	30.04	763.0	37	2.8	80	NW	7	3.1		0	Haze		Calm	0	0	Clear	
Key West, Florida	29.92	760.0	29.95	760.7	80.0	26.7	84	E	4	1.8		2cs	5ks	Calm	S	0.03	0.8	Fair	
Kittyhawk, North Carolina	29.84	757.9	29.86	758.4	65	18.3	100	SE	10	4.5			10n		SE	0.63	16.0	Light rain	
Knoxville, Tennessee	28.95	735.3	29.93	760.2	59	15.0	87	SW	4	1.8			10s		SW	0.35	8.9	Light rain	
La Crosse, Wisconsin	29.21	741.9	29.96	761.0	37	2.8	71	NW	7	3.1		0	0			0.05	1.3	Clear	
La Mesilla, New Mexico	25.98	659.9	30.13	765.3	51	10.6	72	SE	1	0.4		5k	0	SW		0	0	Fair	
Laredo, Texas					62	16.7	100	Calm	0	0			10n		Calm	0.12	3.0	Light rain	
Leavenworth, Kansas	29.25	742.9	30.12	765.0	37	2.8	71	NW	2	0.9		0	0			0	0	Clear	
Los Angeles, California	29.72	754.9	30.07	763.8	46	7.8	60	N	8	3.6		0	0			0.02	0.5	Clear	
Louisville, Kentucky	29.40	746.7	29.95	760.7	55	11.7	60	W	6	2.7			10s; fg		SW	0	0	Cloudy	
Lynchburg, Virginia	29.20	741.7	29.87	758.7	59	15.0	70	NE	2	0.9			10s		Calm	0.17	4.3	Cloudy	
Maricopa Wells, Arizona					30	— 1.1	67									0	0	Clear	
Marquette, Michigan	29.03	737.3	29.74	755.4	34	1.1	69	W	4	1.8		0	0			0	0	Clear	
Mason, Texas	28.42	721.9	30.18	766.6	55	12.8	87	N	4	1.8			10s			0.03	0.8	Cloudy	
Memphis, Tennessee	29.75	755.6	30.07	763.8	53	11.7	79	NW	4	1.8		0	Fog		Calm	0.01	0.3	Clear	
Milwaukee, Wisconsin	29.21	741.9	29.91	759.7	38	3.3	80	W	9	4.0		0	2ks		W	0	0	Fair	
Mobile, Alabama	29.96	761.0	30.09	762.0	68	20.0	94	NW	4	1.8			10s		N	0.63	16.0	Cloudy	
Montgomery, Alabama	29.74	755.4	29.97	761.2	67	19.4	97	W	4	1.8			10ks		NW	0.11	2.8	Cloudy	
Morgantown, West Virginia	28.81	731.8	29.85	758.2	50	10.0	71	S	1	0.4			10s		S	0	0	Threatening	
Mt. Washington, N. H.	23.61	599.9	29.97	761.2	26	— 3.3	100	S	30	13.4			Fog		S	0.10	2.5	Foggy	
Nashville, Tennessee	29.54	749.3	30.03	762.7	55	12.8	74	NW	2	0.9		0	5s		N	0	0	Fair	
New Haven, Connecticut	29.85	758.2	29.97	761.2	39	3.9	71	NE	5	2.2		8ck	Haze	NW		0	0	Cloudy	
New London, Connecticut	29.93	760.2	29.98	761.5	39	3.9	82	N	8	3.6		3c; ck	Haze	W	Calm	Inap.	Inap.	Fair	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	68	20.0	95	N	3	1.3			10n		N	0.14	3.6	Light rain	
Newport, Rhode Island	29.93	760.2	29.98	761.5	44	6.7	76	N	4	1.8		10cs; k	0	SW		0	0	Cloudy	
New York, New York	29.77	756.1	29.94	760.5	47	8.3	69	NE	12	5.4			10ks; fg		SW	0.04	1.0	Cloudy	
Norfolk, Virginia	29.78	756.4	29.84	757.9	62	16.7	100	S	3	1.3			10n		S	0.31	7.9	Light rain	
North Platte, Nebraska	27.15	689.6	29.85	758.2	26	— 3.3	88	NW	5	2.2		0	0			0	0	Clear	
Olympia, Washington Ter.	30.09	764.3	30.13	765.3	38	3.3	100	S	1	0.4			Fog		Calm	0	0	Foggy	
Omaha, Nebraska	28.98	736.1	30.11	764.8	32	0.0	79	Calm	0	0		0	0			0	0	Clear	
Oswego, New York	29.53	750.0	29.85	758.2	45	7.2	67	W	3	1.3			10n		Calm	Inap.	Inap.	Light rain	
Pembina, Dakota	29.03	737.3	29.90	759.4	25	— 3.9	88	S	4	1.8		0	2s		Calm	0	0	Clear	
Philadelphia, Pennsylvania	29.88	758.9	29.94	760.5	46	7.8	92	NE	5	2.2			10s		NW	0.04	1.0	Cloudy	
Phœnix, Arizona					40	4.4	40	SE				0	0			0	0	Clear	
Pike's Peak, Colorado	17.62	447.5	29.83	757.7	14	—10.0	61	S	30	13.4			10s		S	0	0	Cloudy	
Pioche, Nevada	23.94	608.1	29.71	754.6	26	— 3.3	100	S	5	2.2			10n		Calm	0.39	9.9	Light snow	
Pittsburg, Pennsylvania	29.02	737.1	29.82	757.4	46	7.8	76	N	1	0.4			10s; fg		W; Calm	0	0	Cloudy	
Port Huron, Michigan	29.07	738.4	29.73	755.1	43	6.1	75	SW	10	4.5			10n		W	Inap.	Inap.	Light rain	
Portland, Maine	29.98	761.5	30.04	763.0	42	5.6	66	Calm	0	0		5k	5s	Calm	Calm	0	0	Cloudy	
Portland, Oregon	30.06	763.5	30.16	766.1	34	1.1	100	N	6	2.7		0	Fog		N	0	0	Clear	
Prescott, Arizona	24.70	627.4	30.06	763.5	26	— 3.3	60	SE				0	0			0	0	Clear	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	75	23.9	81	SE	8	3.6		0	0			0	0	Clear	
Red Bluff, California	29.73	755.1	30.10	764.5	42	5.6	58	NW	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.18	741.2	29.79	756.7	43	6.1	75	SW	8	3.6			10n; fg		Calm	Inap.	Inap.	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Roseburg, Oregon	29.55	750.6	30.15	765.8	29	— 1.7	100	W	2	0.9			Fog		Calm	0	0	Foggy	
Sacramento, California	29.96	761.0	30.05	763.3	42	5.6	65	SE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.48	748.8	30.06	763.5	47	8.3	55	W	16	7.2		0	0			0	0	Clear	
St. Marks, Florida	29.92	760.0	29.94	760.5	70	21.1	97	SW	1	0.4		8k	Fog	W		0	0	Cloudy	
St. Paul, Minnesota	29.09	738.9	29.94	760.5	33	0.6	69	W	4	1.8		0	0			Inap	Inap.	Clear	
St. Paul's Island, Alaska																			
Salt Lake City, Utah	25.58	649.7	29.91	759.7	37	2.8	80	E	6	2.7			10s		Calm	0.07	1.8	Cloudy	
San Antonio, Texas	29.32	744.7	29.90	759.4	63	17.2	94	NE	6	2.7			10n		NE	Inap.	Inap.	Light rain	
San Diego, California	30.01	762.2	30.08	764.0	52	11.1	59	NE	4	1.8			10s		NW	Inap.	Inap.	Cloudy	
Sandusky, Ohio	29.16	740.7	29.83	757.7	47	8.3	62	SW	12	5.4		0	2s		Calm	0	0	Fair	
Sandy Hook, New Jersey	29.90	759.4	29.92	760.0	55	12.8	74	SE	14	6.3			10ks		SE	0.07	1.8	Cloudy	
San Francisco, California	29.98	761.5	30.05	763.3	49	9.4	77	NW	4	1.8		0	0			0	0	Clear	
Santa Fé, New Mexico	23.18	588.8	29.72	754.9	42.5	5.8	75	SE	18	8.0		Haze	8ks		SE	0	0	Cloudy	
Savannah, Georgia	29.82	757.4	29.91	759.7	70	21.1	95	W	4	1.8			10n		W	1.55	39.4	Light rain	
Shreveport, Louisiana	29.88	758.9	30.10	764.5	58	14.4	100	E	4	1.8			10s		Calm	0.03	0.8	Cloudy	
Smithville, North Carolina	29.84	757.9	29.88	758.9	67	19.4	95	W	3	1.3			10n		Calm	1.51	38.4	Light rain	
Springfield, Massachusetts	29.81	757.2	29.95	760.7	37	2.8	71	N	2	0.9		5ck	Haze	W		0	0	Fair	
Stanwix, Arizona					38	3.3	63	NE				0	0			0	0	Clear	
Stockton, Texas	27.02	686.3	30.02	762.5	48	8.9	100	NE	4	1.8			10n		Calm	Inap.	Inap.	Light rain	
Thatcher's Island, Mass	29.97	761.2	30.03	762.7	48	8.9	77	SE	12	5.4		8c;cs	0	NW		0	0	Fair	
Toledo, Ohio	29.14	740.1	29.80	756.9	49	9.4	57	SW	9	4.0		0	2s		SW	0	0	Fair	
Tucson, Arizona	27.52	699.0	30.07	763.8	62	16.7	86	Calm				0	0			0	0	Clear	
Tybee Island, Georgia	29.87	758.7	29.90	759.4	69	20.6	100	W	2	0.9			10n		W	1.07	27.2	Light rain	
Umatilla, Oregon	29.89	759.2			20	— 6.7	72	SE	8	3.6		0	0			0	0	Clear	
Vicksburg, Mississippi	29.83	757.7	30.09	764.3	58	14.4	94	N	4	1.8			10s		NE	0.03	0.8	Cloudy	
Virginia City, Montana	24.29	617.0	29.77	756.1	19	— 7.2	69	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.70	754.4	30.09	764.3	37	2.8	62	E	3	1.3		0	0			0	0	Clear	
Washington, D. C.	29.77	756.1	29.87	758.7	52	11.1	100	E	3	1.3			10n;fg		E	0.05	1.3	Light rain	
Wickenburg, Arizona					26	— 3.3	19	N				2c	0	Calm		0	0	Fair	
Wilmington, N. Carolina	29.79	756.7	29.86	758.4	65	18.3	100	S	4	1.8			10n		S	1.73	43.9	Light rain	
Winnemucca, Nevada	25.58	649.7	29.94	760.5	35	1.7	52	S	8	3.6		10k	0	NE		0	0	Cloudy	
Wood's Holl, Mass	29.95	760.7	30.00	762.0	51	10.6	79	SE	6	2.7		0	5s		SE	0	0	Fair	
Yankton, Dakota	28.81	731.8	30.16	766.1	28	— 2.2	82	SW	8	3.6		0	0			0	0	Clear	
Yuma, Arizona	29.89	759.2	30.06	763.5	43	6.1	35	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
York Factory, B. A.	29.72	754.9	29.77	756.1	24.0	— 4.4	94	NW	16	7.2			10n			0.01	0.3	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I.	29.90	759.4	29.92	760.0	79	26.1	82	Calm	0	0		8c;cs	0	NE		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	79	26.1	86	Calm	0	0		2c	0	Calm		0	0		James Gall.
Navassa, W. I.	29.81	757.2	29.89	759.2	83	28.3		E			1					0.47	11.9	Cloudy	F. M. Everett.
St. Thomas, W. I.					84	28.9	75	E	5	2.2		2c	8ks	E		0.67	17.0	Cloudy	G. O. Gellich.
Paramaribo, D. Guiana, S. A.			30.00	762.0	83	28.3	79	E			2	3	6ks			0	0	Cloudy	C. J. Hering.
Batavia, Dutch Guiana, S. A.																			Dr. H. Groot.
Medellin, Colombia, S. A.	25.18	639.6			66.0	18.9	83	Calm			0	3ck	4ks			0.78	19.8	Cloudy	Thomas Herran.
Honolulu, Oahu, H. I.																			Daniel Smith.
Makawao, Maui, H. I.																			F. L. Clarke.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Makawao, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters: Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettsville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Clifton, about 2,892 ft., or 881.5 m.; Concho, 1, 750 ft., or 533.4 m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Bayard, 6,000 (?) ft., or 1,828.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Fort Sully, 1,678 (?) ft., or 511.4 (?) m., Florence, 1,550 (?) ft., or 472.5 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; Makawao, 2,205 ft., or 672.2 m.; Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Camp Verde, 3.488 inches; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Bayard, 6.0 in.; La Mesilla, 4.15 in.; Makawao, 2.17 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in. Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. It is not certain that the weather for Batavia refers to the moment of observation.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Rear Admiral Daniel Ammen, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As reported.* Inches.	Barometer. As reported.* Millimeters	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NavyYard Mare Island, Cal.	30.03	762.7	52	11.1	48	8.9	70	N	1	0.4			0			0	0			Clear	
Navy Yard, Pensacola, Fla.	30.10	764.5			70	21.1	95	NNW	2	0.9			10			0	0			D. clouds	
NavyYard, Portsmouth, N.H	30.04	763.0	58	14.4	42	5.6	??	SE			1					0	0			Clear	
Naval Hospital, Yokohama, Japan	30.04	763.0	58.5	14.7	53.5	11.9	97	N			2		10n		N	0.18	4.6			Light rain	
Adams. Montevideo, Uruguay	30.13	765 3	60	15 6	59	15 0	76	ENE			3		10		NW	0	0	Light	S	D. clouds	
Alert, Nagasaki, Japan	30.07†	763.8†	62	16.7	62	16.7	83	NE			2		3		NE			Smooth		D. clouds	
Alliance, Constantinople, Turkey.	30.01	762.2	65	18.3	61	16.1	88	NNE			1–2		9		N&E					Pleasant	
Ashuelot. Tientsin, China	30.18	766.6	66	18.9	52	11.1	79	SSE			2		0					Smooth		Blue sky	
Canonicus, New Orleans, La	30.02	762.5	51	10.6	68	20.0	100	NNW			2		10							Cloudy	
Colorado, New York, N. Y	30.01	762.2	65	18.3	48	8.9	78	ENE	1	0.4			9		WSW	0.06	1.5			Cloudy	
Despatch, Constantinople, Turkey.	30.00	762.0	65	18.3	62	16.7	88	NE			3		10		NE					Rainy	
Franklin, Norfolk, Va	29.96	761.0	62	16.7	64	17.8	100	SSE	4	1.8			10		SSE	0.2	5.			Overcast	
Gettysburg, Catania, Italy	29.88‡	758.9‡			71	21.7	100	S&E			1–2		1		Calm	0	0			D. clouds	
Guard, Huntington, Long Island	30.00	762.0	58	14.4	50	10.0	45	E			2		10		E					D. clouds	
Kearsarge, N. 22° 51′, E. 36° 45′	29.90	759.4			87	30.6	96	NNW			3		4		N	0	0	Smooth		D. clouds	
Lackawana, Port Townsend, W. T.	30.16	766.1			47	8.3	77	Calm			0		3		SE			Smooth		D clouds	
Marion, Smyrna, Turkey	29.87	758.7	66	18.9	66	18.9	68	SW			1		4		Calm	Light	Light	Smooth		Drizzling	
Michigan, Lake Erie	29.30	744.2	62	16.7	48	8.9	85	WNW			5		10		W					Cloudy	
Monocacy, Yokohama, Japan	30.02	762.5	56	13.3	54	12.2	100	N			1–2		10			0	0	Smooth		Overcast	
Monongahela, Gibraltar, Spain	30.30	769.6	71	21.7	71	21.7	66	W			1–2		ck					Smooth		D. clouds	
New Hampshire, Port Royal, S.C	30.08	764.0			70	21.1	95	SW	2	0.9			10		SW	0.06	1.5			D. clouds	
Omaha, S. 22° 53′, W. 76° 30′	30.18	766.6	65	18.3	63.5	17.5	72	SE	15	6.7			10		SE	0.04	1.0	Slight	S	Cloudy	
Onward, Callao, Peru	30.04†	763.0†	70	21.1	67.5	19.7	87	SE			2		10					Long	W	Misty	
Ossmee, Lynn Haven Roads, Va	29.88	758.9	68	20.0	65	18.3	89	S			2		10		Calm					Misty	
Palos, Shanghai, China	30.26	768.6	63	17.2	58	14.4	88	NE			1		0							Clear	
Pensacola, Mare Island, Cal	30.09	764.3			48	8.9	85	N&W			1		0			0	0			Clear	
Plymouth. Norfolk, Va	30.12†	765.0†	70	21.1	65	18.3	94	S&E			1		10							Drizzling	
Ranger, Shanghai, China	30.32	770.1			64	17.8	78	Calm			0		1		Calm					Pleasant	
Rio Bravo, Brownsville, Texas	29.83	757.7			73	22.8	95	WNW			2		10		NW					Misty	
Santee, Annapolis, Md	29.95	760.7	60	15.6	55	12.8	87	SE			4		10		S	0.01	0.3			Overcast	
St. Louis, League Island, Pa	29.85	758 2	47	8.3	49	9.4	85	NE	4	1.8			10		NE	0.12	3.0			Overcast	
Swatara, Hampton Roads, Va	29.97	761.2			66	18.9	89	S			1		10							D. clouds	
Tennessee, Yokohama, Japan	30.10	764.5	61	16.1	56	13.3	100	NNW	4	1.8			10		S	0.12	3.0	Moderate.	N	Raining	
Trenton, Villefranche, France	30.16†	766.1†	68	20.0	65	18.3	68	SE	2	0.9			5		S&W	0	0			D. clouds	
Vandalia, Villefranche, France.	30.14	765.5	66	18.9	66	18.9	79	S			1		0							Blue sky	
Wabash, Boston, Mass	30.03	762.7	59	15.0	44	6.7	92	NW	1	0.4			8		Calm	0	0			Foggy	
Wyoming, Washington, D. C	30.25†	768 3†			62	16 7		N&E			0–1		0							D. clouds	

NOTE.—The originals generally give the wind-force by the scale 0 to 12, and the weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. † Aneroid Barometer. ‡ Barometer corrected for instrumental error and reduced to sea-level.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Low'r	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Character.	Direction from—		

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			Capt. Seabury.
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Howard.
S. S. City of Peking, Yokohama, Japan			30.24*	768.1*	55	12.8	87	N			1		10		N	Smooth		Raining	Lt. Z. L. Tanner, U.S.N.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Cavarly.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.

NOTE.—The originals give the wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of George H. Bradbury, President; T. H. Goodman, Agent.

S. S. Belgic, N. 30° 3′, W. 157° 58′			30.06†	763.5†				Var.			5-6		Heavy		W	Heavy	NW	Squally	Capt. John Metcalf.
S. S. Gaelic, N. 38° 45′, E. 126° 21′			30.09*	764.3*	64	17.8	94	SE			4		8		SE	Smooth		D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. H. Parsell.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time. †Corrected for temperature and elevation; instrumental error not known. *Aneriod.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. C. Pohle.
S. S. Braunschweig, N. 51° 36′, E. 2° 15′			30.18	766.6	61.0	16.1	61	NW			6		3k		NW	Smooth		Blue sky	Capt. K. Undütsch.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; temperature by Réaumur scale, except for S. S. Braunschweig, Nürnberg and Ohio; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, nor distinguish between upper and lower clouds

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of vessels.	True course toward—	Hourly rate in knots.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Sea-swell.		Weather.	Observer.
								Direction.	Velocity.		Force.	Amount.		Direction.					
												Up'er	Lo'wr	Upper.	Lower.				
			Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second	0—10.	0—10.	0—10.	From—	From—	Character	Direction from—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa			30.24*	768.1*	49	9.4	100	NW			4		7		NW			Clear	Captain Sargent.
S. S. Ohio. Philadelphia, Pa			29.85	758.2	50	10.0	86	E			1							Gloomy	Captain Morrison.
S. S. Pennsylvania, Liverpool			30.09†	764.3†	58	14.4	88	NW			6		4		NW			Clear	Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 09′, W. 27° 52′			30.35*	770.9*	57	13.9		S	18	8.0			3		SSW	Moderate.	NW	Fine	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Hibernian																			Capt. W. Richardson.
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Hyannis, Mass			30.03	762.7	54	12.2	80	SE	14	6.3			8s		S			Stormy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; the wind-force by the scale 0 to 12. *Aneroid; corrected for elevation, instrumental error not known. †Aneroid.

* Aneroid; regulated to standard at Antwerp.

NOTE.—The originals for the schooner Addie Fuller give the amount of cloudiness by the scale 0 to 4; the barometer as read off.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from the regular exchanges of this office, made in each instance in compliance with an especial request, and are published for the uses of the coöperating observers. The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters or their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Maj.) Chief Signal Officer, U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

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Albert J. Myer

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